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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicant : Jackwerth et al.
Appl. No. : 09/831,431
Filed : 07/13/01
Title : UTILIZATION OF CATION-ACTIVE MIXTURES

Grp./A.U. : 1619
Examiner : G. Yu

Docket No. : H 3739 PCT/US ;

TECH CENTER 1600/2900

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APPEAL BRIEF TRANSMITTAL

Commissioner for Patents
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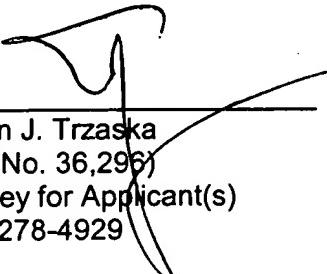
Sir:

Appellants' brief, in triplicate, is transmitted herewith in accordance with 37 CFR 1.192.

Please charge the required fee of \$320.00 to our Deposit Account No. 50-1177. This paper is enclosed in triplicate. Order No. 02-0320.

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Respectfully submitted,


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(Reg. No. 36,296)
Attorney for Applicant(s)
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Washington, DC 20231

BRIEF ON APPEAL UNDER 37 C.F.R. 1.192

Sir:

REAL PARTY IN INTEREST

The real party in interest is Cognis Deutschland GmbH & Co. KG, Henkelstrasse 67, 40589 Duesseldorf, Germany.

RELATED APPEALS AND INTERFERENCES

None.

STATUS OF CLAIMS

Claims 11-22 are the subject of this appeal.

Appl. No.: 09/831,431
Grp./A. U.: 1617

STATUS OF AMENDMENTS

No amendments were made after final rejection.

SUMMARY OF THE INVENTION

Briefly stated, the present invention is directed to a process for treating human skin and/or hair involving contacting said skin and/or hair with an aqueous composition containing an esterquat, an oil component, a fatty alcohol and a fatty alcohol polyglycol ether. See page 2, lines 3-17 of the application.

ISSUES

Whether claims 11-22 are obvious under 35 U.S.C. § 103(a) over Prat et al. (US 5,718,891) in view of Ponsati Obiols et al. (US 5,880,299) and Inman et al. (US 5,935,661).

GROUPING OF THE CLAIMS

The claims do not stand and fall together. More particularly, none of the prior art references relied upon by the Examiner disclose the claimed proportions of components contained in claim 22 of the present invention, particularly with respect to the claimed oil component.

ARGUMENT

Neither Prat nor Ponsati Obiols contain the requisite teaching or suggestion to motivate one skilled in the art to wish to seek out the Inman reference and then wish to employ its select conditioning oils, in either of the primary reference's compositions.

Initially, Appellant would like to note that it is well settled that an Examiner cannot establish obviousness through references describing various aspects of an Applicant's invention unless the Examiner also provides evidence of motivating force to compel a person skilled in the art to do what Applicant has done. See, Ex parte Levingood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). Appellant respectfully submits that neither

Appl. No.: 09/831,431

Grp./A. U.: 1617

the Prat nor the Ponsati Obiols' references contain the requisite teaching or suggestion which might motivate one skilled in the art to seek out the Inman reference and then choose to employ its oil component in either the Prat or Ponsati Obiols' compositions, for the following reasons.

First, both the Prat and Ponsati Obiols' references **admittedly** fail to contain any teaching or suggestion relating to the use of the claimed oil component, in combination with the other claimed components, for treating hair and/or skin. In an attempt to overcome this admitted lack of teaching or suggestion, the Examiner relies on the teaching of the Inman reference relating to the use of certain organic oils, in combination with cationic conditioning polymers, for treating hair. Appellant respectfully submits that the Inman reference, rather than motivating one skilled in the art to wish to employ its conditioning oils in either the Prat or Ponsati Obiols' compositions, instead **teaches away** therefrom. More particularly, the Inman reference clearly teaches that it is only when **certain conditioning oils and synthetic esters** are combined with cationic hair conditioning polymers that satisfactory conditioning of hair is realized. See, col. 1, lines 46-67 of the Inman reference. However, since neither Prat nor Ponsati Obiols disclose the use of the specific synthetic esters taught by Inman, then one of ordinary skill in the art would not be motivated to employ Inman's particular conditioning oils for fear that they would produce a slimy feeling on an end user's hair. This being the case, Appellant would like to note that one important indicium of **non-obviousness** is the **teaching away** from the claimed invention by the prior art. See, In re Braat, 16 USPQ2d 1812, 1814 (Fed. Cir. 1990). Consequently, since Inman teaches away from the use of its oils in compositions such as those of Prat and Ponsati Obiols, the requisite motivation to combine its teaching with that of the primary references does not exist. As a result, a *prima facie* case of obviousness should not be established against the claimed invention based on a combination of these references.

Secondly, Appellant would like to note that it is well settled that absent a recognition in the art of a potential problem, it is difficult to perceive from whence stems the requisite motivation to take preventive action. See, Ex parte GPAC Inc., 29 U.S.P.Q.2d 1401 (Bd.

(b), d

Inman
teaches
the use of cond. oil.

Appl. No.: 09/831,431
Grp./A. U.: 1617

whole solution

Pat. App. & Inter. 1993) at 1416. It is equally well settled that if the prior art fails to recognize the problem solved by the Applicant, the references could not suggest Applicants' solution to the problem. See, In re Shaffer, 108 USPQ 326, 329 (CCPA 1956).

Clearly, neither Prat nor Ponsati Obiols consider their compositions to be defective in terms of the feeling which they impart on human skin or hair. As a result, there exists no motivation on the part of the routine, after having read the teachings of these primary references to wish to employ additional components, such as the select conditioning oils of Inman, in either of their compositions since the use of these apparently unnecessary ingredients will increase the cost of both Prat's and Ponsati Obiols' compositions, potentially pose compatibility issues with their required ingredients and, based on the teaching of Inman, make their compositions feel slimy to end users as is noted in Inman at col. 1, lines 53-58. Consequently, since the primary reference fail to recognize even the existence of a problem in term of "feel", there is clearly no reason to take preventive action such as the use of Inman's select conditioning oils.

SUMMARY

There exists no motivation on the part of one skilled in the art to wish to seek out the Inman reference and then wish to employ its select conditioning oils..

It is requested for the reasons given above, that the Board find for Appellant on all of the issues, and reverse the Examiner's Final Rejections.

Respectfully submitted,



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APPENDIX

CLAIMS ON APPEAL

11. A process for treating human skin and hair comprising contacting the skin or hair with an aqueous composition containing:
 - (a) an esterquat;
 - (b) an oil component;
 - (c) a fatty alcohol; and
 - (d) a fatty alcohol polyglycol ether.
12. The process of claim 11 wherein the esterquat is present in the composition in an amount of from about 0.1 to 25% by weight, based on the weight of the composition.
13. The process of claim 11 wherein the oil component is present in the composition in an amount of from about 0.5 to 90% by weight, based on the weight of the composition.
14. The process of claim 11 wherein the fatty alcohol is present in the composition in an amount of from about 0.1 to 75% by weight, based on the weight of the composition.
15. The process of claim 11 wherein the fatty alcohol is cetearyl alcohol.
16. The process of claim 11 wherein the fatty alcohol polyglycol ether is present in the composition in an amount of from about 0.1 to 75% by weight, based on the weight of the composition.
17. The process of claim 11 wherein the fatty alcohol polyglycol ether is a cetearyl ethoxylate having from about 1 to 20 moles of ethylene oxide.
18. The process of claim 11 wherein both the fatty alcohol and the fatty alcohol polyglycol ether have identical fatty acid residues.
19. The process of claim 11 wherein (a), (c) and (d) are present in the composition in a ratio by weight of (a):(c)+(d) of from about 90:10 to 10:90.
20. The process of claim 11 wherein (a), (c) and (d) are present in the composition in a ratio by weight of (a):(c)+(d) of from about 80:20 to 70:30.
21. The process of claim 11 wherein (a), (c) and (d) are present in the composition in

Appl. No.: 09/831,431

Grp./A. U.: 1617

a ratio by weight of (a):(c)+(d) of from about 20:80 to 30:70.

22. A process for treating human skin and hair comprising contacting the skin or hair with an aqueous composition containing:

- (a) from about 5 to 15% by weight of an esterquat;
- (b) from about 5 to 50% by weight of an oil component;
- (c) from about 5 to 50% by weight of a fatty alcohol; and
- (d) from about 5 to 50% by weight of a fatty alcohol polyglycol ether, all weights

being based on the total weight of the composition.

[Print-Friendly Version](#)**FULL TEXT OF CASES (USPQ2D)**

All Other Cases

In re Braat (CA FC) 19 USPQ2d 1289 (6/28/1991)

78 PQR 1289

In re Braat (CA FC) 19 USPQ2d 1289

In re Braat**U.S. Court of Appeals Federal Circuit
19 USPQ2d 1289**Decided June 28, 1991
No. 90-1470**Headnotes****PATENTS****1. Patentability/Validity - Anticipation - Double patenting (§ 115.0708)**

Board of Patent Appeals and Interferences correctly found that rejected claims for optical record carriers are merely obvious variations of invention described by dependent claims of commonly-assigned prior patent, since only difference is omission of requirement in patent claims of information areas having side walls which are angled at particular angle, and omission of such limitation is not unobvious modification, but board did err by applying only "one-way" patentability determination and by failing to determine whether patented claims are patentably distinct from invention described in rejected claims, since such "two-way" determination is necessary in this case in order to sustain rejection for obviousness-type double patenting; patent claims are patentably distinct, since nothing in rejected claims refers to any angling of side walls of information areas, much less specific angles recited in patent claim.

2. Patentability/Validity - Anticipation - Double patenting (§ 115.0708)

Purpose of rule against double patenting is to prevent unjustified timewise extension of right to exclude that is granted by patent; thus, only if extension of patent right is unjustified is double patenting rejection appropriate, and there are situations where extension is justified.

Case History and Disposition:

Appeal from the U.S. Patent and Trademark Office, Board of Patent Appeals and Interferences.

Application, serial no. 569,546, filed Jan. 10, 1984, by Josephus J. M. Braat (record carrier with optically readable phase structure and apparatus for reading); U.S. Philips Corp., real party in interest. From decision affirming rejection of claims, applicant appeals. Reversed.

Attorneys:

Jack E. Haken (Algy Tamoshunas and John F. Moran, on brief), Tarrytown, N.Y., for appellant.

Jameson Lee, associate solicitor (Fred E. McKelvey, solicitor, with him on brief), Arlington, Va., for appellee.

Judge:

Before Nies, chief judge, and Rich and Clevenger, circuit judges.

Opinion Text

Opinion By:

Rich, J.

Braat appeals from the May 30, 1990 decision of the United States Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences (Board), Appeal No. 90-0971, affirming the rejection of claims 8-10, 13, and 15-17 of application Serial No. 569,546 (Braat), filed January 10, 1984, entitled "Record Carrier with Optically Readable Phase Structure and Apparatus for Reading," on the grounds of obviousness-type double patenting in view of commonly-assigned U.S. Patent No. 4,209,804 (Dil). We reverse.

BACKGROUND

Nature of Braat's Invention

The real party in interest in this case is U.S. Philips Corporation (Philips), the assignee of both the Braat application and the Dil patent. The Braat application is based, through two intervening continuing applications, on application Serial No. 925,433 filed July 17, 1978, which in turn claims priority from a Netherlands patent application filed April 3, 1978. The Dil patent issued June 24, 1980, on an application filed January 31, 1979.

Both the Braat application and the Dil patent are concerned with optical record carriers of the type that store information which can be retrieved by scanning the record carrier with a beam of radiation such as a laser beam. One commonly-known example of such a record carrier is the compact disc, or CD.

Record carriers are generally circular, and store the information in tracks extending around the surface of the carrier. The tracks are made up of "information areas" separated by "intermediate regions." For example, the information areas can be pits formed in the track, and the intermediate regions can be lands formed between the pits. Information can be encoded by varying the length or spacing between the pits. A read apparatus is used to retrieve the information by projecting a read beam onto the information tracks and detecting variations in the light transmitted through or reflected from the tracks as the beam passes over the information areas.

The Braat application is concerned with the ability to increase the amount of information which can be stored on a record carrier. One way to do so, of course, is to place the tracks closer together. However, the minimum spacing between the tracks is limited by the ability of the read apparatus to focus the read beam on a single track. If the tracks are placed too close together, then a read beam which is intended to illuminate a certain track may inadvertently illuminate an adjacent track as well, resulting in interference or "cross-talk."

The Braat application discloses a way to reduce the effect of "cross-talk," so that even if more than one track is inadvertently illuminated, the apparatus can still accurately read the stored information. This is done by alternating the "phase depth" 1 of adjacent tracks (or, more generically, of adjacent track portions) and then using two different detection systems, one of which is particularly sensitive to the signal from track portions of one phase depth and the other of which is sensitive to the signal from track portions of the other phase depth. As a result, the tracks can be placed closer together.

In the preferred embodiment described in the Braat application, the phase depth is altered by varying the physical depth of the pits in adjacent tracks. Figure 3 of the Braat application (shown below) is a radial cross-section of the preferred embodiment, and illustrates this concept.

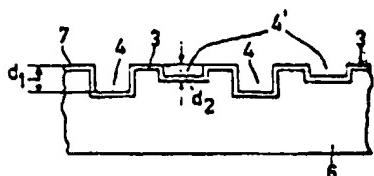


Fig. 3

As seen above, the tracks alternate between ones which have information areas (pits) 4 which are of a depth d_1 , and ones which have information areas 4T of depth d_2 . 2

Claim 8 is illustrative of the claims on appeal. It reads as follows.

8. A record carrier comprising an information structure containing information adapted to be read with a beam of radiation of a single wavelength, said information structure having a plurality of adjacent information track portions each comprising a plurality of areas separated from each other along said track portion by intermediate regions having a different influence on the read beam than said areas, one track portion of a pair of said

Page 1291

adjacent track portions containing areas of a configuration which diffract the read beam of said single wavelength incident thereon into a zero order subbeam and a first order subbeam with a first phase difference therebetween and the other track portion of said pair containing areas of a second configuration which diffract the read beam of said single wavelength incident thereon into said zero and first order subbeams with a second phase difference therebetween which is different from said first phase difference.

The Dil Patent

The Dil patent is also concerned with controlling the phase depth of information areas on record carriers, but is primarily concerned with the effect that the angle of the side walls of the information areas has on the phase depth. Dil teaches that a particularly useful record carrier is one which has V-shaped information areas with (1) a phase depth in the range between 100° and 125°, and (2) side walls whose angle of inclination is in the range between 65° and 85° (relative to the normal to the carrier surface).

Dil recognizes that this *improvement* is particularly useful when combined with the invention of the Braat application, which is specifically referred to, and so discloses an embodiment wherein alternating track portions have different phase depths, and the information areas have angled side walls. For example, the Dil patent specification includes the following:

Two types of information areas in one record carrier may for example be used in order to obtain a high information density, as is described in U.S. patent application Ser. No. 925,433, filed July 18, 1978 [Braat]. If in such a record carrier use is made of the concept underlying the invention, said record carrier is characterized in that between first information tracks containing information areas with a phase depth between 100° and 110° second information tracks are formed which contain information areas whose phase depth is approximately 180°.

Claim 1 of Dil is directed to the improvement disclosed in that patent, i.e., a record carrier having angled side walls. Specifically, it states in relevant part:

1. A record carrier ... characterized in that the cross-section, transverse to the track direction, of the information areas is substantially V-shaped, that the phase depth of the information areas has one value between 100° and 125°, and that the angle of inclination between the walls of the information areas and the normal to the record carrier is substantially constant and has a value between 65° and 85°.

However, *dependent* claims 5 and 6 of Dil recite as an additional feature the alternating phase depth structure of the Braat application. For example, claim 5 reads as follows:

5. A record carrier as claimed in claim 1, characterized in that between first information tracks containing information areas with a phase depth between 100° and 110° second information tracks are formed which contain information areas whose phase depth is approximately 180°.

The PTO examiner rejected claims 8-10, 13, and 15-17 of the Braat application under the doctrine of obviousness-type double patenting as claiming subject matter not patentably distinct from that claimed in claims 1, 5 and 6 of the Dil patent. On appeal, the Board found that *independent claim 1 of Dil alone did not form a proper basis for a double patenting rejection*, but that dependent claims 5 and 6 did support the rejection. The following are excerpts from the Board's opinion:

We agree with and sustain the rejection of claims 8, 9, 10, 13, 15, 16 and 17 on the basis of double patenting with respect to claims 5/1 and 6/1 of the Dil patent. The claims here being broader than claims 5/1 and 6/1 in the Dil Patent, the double patenting rejection is of the type created by the courts to prevent unjustified timewise extension of the right to exclude granted by a patent no matter how the exclusion [sic, extension] is brought about. See *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982).

Appellant has also argued that the Office in granting the Dil patent must have made the determination that those claims are patentably distinct from the claims of the present application, and hence based upon such patentable distinction he is entitled to the claims. Whether or not the claims in Dil are patentably distinct from the claims in the instant application is not the issue. The issue is whether the claims on appeal are patentably distinct over claims 5/1 and 6/1 of Dil. Manifestly, the claims rejected for double patenting with respect to claims 5/1 and 6/1 of Dil are not patentable over those claims.

This appeal followed.

OPINION

Obviousness-type double patenting is a judicially created doctrine intended to prevent

Page 1292

improper timewise extension of the patent right by prohibiting the issuance of claims in a second patent which are not "patentably distinct" from the claims of a first patent. *See In re Longi*, 759 F.2d 887, 892, 225 USPQ 645, 648 (Fed. Cir. 1985). The doctrine has also been phrased as prohibiting claims in the second patent which define "merely an obvious variation" of an invention claimed in the first patent. *In re Vogel*, 422 F.2d 438, 441, 164 USPQ 619, 622 (CCPA 1970). We note at the outset the difficulty which arises in all obviousness-type double patenting cases of determining when a claim is or is not an obvious variation of another *claim*. As this court's predecessor, the CCPA, noted in *Vogel*, 422 F.2d at 441-42, 164 USPQ at 622, a claim often does not describe any particular thing but instead defines the boundary of patent protection, and it is difficult to try to determine what is a mere obvious variation of a legal boundary. However, this court has endorsed an obviousness determination similar to, but not necessarily the same as, that undertaken under 35 USC §103 in determining the propriety of a rejection for double patenting. *See Longi*, 759 F.2d at 892 n.4, 225 USPQ at 648 n.4.

The crux of this appeal comes down to whether the Board erred in applying a "one-way" patentability determination instead of a "two-way" determination. The Board correctly found that the rejected claims of Braat are merely obvious variations of the invention described by dependent claims 5/1 and 6/1 of Dil. The only difference between the claims of Braat and claims 5/1 and 6/1 of Dil is the *omission* of the requirement in the claims of Dil of information areas having side walls which are angled at a particular angle, and we do not think that *omission* of such a limitation in the present case would constitute an unobvious modification. The issue is whether the Board erred in concluding that such a one-way determination was all that was necessary or whether it was necessary to also determine whether the claims of Dil are patentably distinct from the invention described by the rejected claims of Braat; i.e., whether the *addition* in the claims of Dil of side walls which are angled at a particular angle was merely an obvious modification over the invention claimed in Braat.

On appeal, Philips (the assignee) attempts to characterize the invention of Dil as an improvement over the invention of the Braat application, citing 3 D. Chisum *Patents*, §9.03 [2] [c] (1990), entitled "Generic Claim Issuing After Later Filed Specific or Improvement Claim," as well as *In re Borah*, 345 F.2d 1009, 148 USPQ 213 (CCPA 1966), for the proposition that when a latter filed improvement patent issues before an earlier filed basic invention, a double patenting rejection is only proper against the claims to the basic invention if the improvement is not patentably distinct from the basic invention. The rationale behind this proposition is that an applicant (or applicants), who files applications for basic and improvement patents should not be penalized by the rate of progress of the applications through the PTO, a matter over which the applicant does not have complete control. *See Chisum, supra*. In this situation, the order of issuance is, in effect, ignored, and the relevant determination becomes whether the improvement is patentably distinct from the generic invention. *Id.* 3

We hesitate to characterize the Dil invention as an "improvement" over the Braat invention. The word "improvement" implies that it was developed specifically for use with the "basic" invention, and thus must have come later in time. The Dil patent invention, however, is totally separate from that of Braat, and could conceivably have been developed earlier rather than later. The inventions of Dil and Braat are independent but when jointly used may complement each other, and it is for that reason that Dil disclosed the Braat invention in his own patent application and, in claims 5/1 and 6/1, claimed the use of the two inventions in combination. A better characterization of the relationship between the inventions is as combination/subcombination. Braat and Dil each developed separate subcombination inventions, which are described by their respective independent claims. Dil then *combined* these two subcombinations to form a third invention. This combination is described by dependent claims 5/1 and 6/1 of Dil.

[1] However, we agree that the reasoning of *Borah* and Chisum, §9.03 [2] [c] is appli

Page 1293

cable in the present case. 4 Philips could not have included the claims of Dil in the Braat application, for Braat did not invent the subject matter of the Dil claims, i.e., information areas having V-shaped side walls at particular angles of inclination. Nor could Philips have included the claims of Braat in the Dil application, for Dil did not invent the subject matter of the Braat application, i.e., adjacent track segments of different phase depth. Philips filed the Braat and Dil applications so as to maintain proper inventorship, with claims directed to Braat's "subcombination" invention in the first application and claims directed to both Dil's "subcombination" invention and to the "combination" invention in the second application. Philips even acknowledged in Dil's application that part of the combination invention was invented by Braat, not Dil. It is not Phillips' fault that the combination claims in the Dil patent issued first. Thus, a double patenting rejection is sustainable here only if claims 5/1 and 6/1 of Dil are not patentably distinct from the subject matter defined by the rejected claims of Braat, and the Board erred in sustaining the double patenting rejection without making such a "two-way" determination.

We are further convinced that claims 5/1 and 6/1 of Dil are patentably distinct from the subject matter defined by the claims of Braat. Claims 5/1 and 6/1 of Dil, of course, include the limitations of Dil's independent claim 1, which requires, among other things, V-shaped information areas with side walls having an angle of inclination, relative to the normal to the record carrier, of between 65° and 85°. There is nothing in the rejected claims of Braat which refers to any angling of the side walls of the information areas, much less the specific angles recited in claim 1 of Dil. Moreover, we note that in the preferred embodiment of the Braat application, the information areas are all rectangular, and have side walls which are not inclined relative to the normal to the carrier. 5 Since the subject matter embraced by the rejected claims of Braat does not suggest the record carrier recited by claims 5/1 and 6/1 of Dil, we conclude that the claims of the Braat application and the Dil patent are patentably distinct, and that the double patenting rejection was in error.

It is true that allowance of the Braat application will result in some timewise extension of Philips' patent protection of the Dil structure. This is because Braat's claims dominate the invention of Dil claims 5/1 and 6/1. As our predecessor court pointed out in *Borah*, in analogizing the *Stanley* decision, "We see ... that as a matter of law the extension of protection objection is not necessarily controlling." 354 F.2d at 1017, 148 USPQ at 220. There is nothing to the contrary in the 1982 *Van Ornum* case cited by the Board. The reason the CCPA affirmed the double patenting rejection in *Van Ornum* is clearly stated in the opinion, 686 F.2d at 943, 214 USPQ at 766 (emphasis in original):

he *only difference* between the claims on appeal and the claims of the '799 patent *resides in the recited ratio* of high to low molecular weight butyl rubber, as follows:

application: between 20/80 and 60/40

patent '799: between 35/65 and 45/55.

[2] The passage which the Board appears to have focussed on in *Van Ornum* states: "The fundamental reason for the rule [against "double patenting"] is to prevent unjustified timewise extension of the right to exclude granted by a patent no matter how the extension is brought about." 686 F.2d at 943-44, 214 USPQ at 766 (emphasis in original) (quoting *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968)). Thus, only if the extension of patent right is *unjustified* is a double patenting rejection appropriate. There are situations where the extension is justified. See *Borah*; *In re Kaplan*, 789 F.2d 1574, 1577-78, 229 USPQ 678, 681-82 (Fed. Cir. 1986). This case presents such a situation.

Page 1294

CONCLUSION

For the foregoing reasons, the decision of the Board is REVERSED

Footnotes

Footnote 1. When the read beam is incident on the surface of the record carrier, it is diffracted into a zero order subbeam, a number of first order subbeams, and a large number of higher order subbeams. The term "phase depth" is defined in the Braat application as the phase difference between the zero order subbeam and the first order subbeams. The phase depth of a track portion is dependent on numerous factors, including the physical depth of the track portion and, as will be discussed further with respect to the Dil patent, the angle of the side walls of the information areas which make up the track portion.

Footnote 2. The depth variation shown in Fig. 3 is greatly exaggerated; in reality this depth variation is very small, i.e., on the order of a fraction of a wavelength of the read beam.

Footnote 3. Although *Borah* is the latest authority of which we are aware which stands for this proposition, it is certainly not the only one. See also *In re Stanley*, 214 F.2d 151, 102 USPQ 234 (CCPA 1954); *In re Calvert*, 97 F.2d 638, 38 USPQ 184 (CCPA 1938); *Thomson-Houston Elec. Co. v. Elmira & Horseheads Ry. Co.*, 71 F. 396 (2d Cir.), cert. denied 163 U.S. 685 (1896); *Thomson-Houston Elec. Co. v. Ohio Brass Co.*, 80 F. 712 (6th Cir. 1897). In fact, *Stanley* is more relevant to the present case than is *Borah*, since *Stanley* deals specifically with commonly-assigned inventions of two co-workers. *Borah* approved *Stanley* notwithstanding it extended protection for four years. See *Borah*, 354 F.2d at 1017, 148 USPQ at 220.

Footnote 4. In his brief to this court, the PTO solicitor's primary objection to Braat's reliance on the reasoning of *Borah* and Chisum is that Braat did not adequately raise this argument below and thus is precluded from raising it on appeal. We disagree. Braat has argued throughout these proceedings that the double patenting rejection was in error because the claims of Dil are patentable over the subject matter of the claims of Braat, even if the contrary is not true. The Board disagreed, stating that it was not necessary to make such a ("two-way" determination. On appeal, Braat has merely pointed out where the Board erred, and has cited persuasive authority for his position.

Footnote 5. In determining whether one claim is patentable in view of the subject matter of another *claim*, it is useful to compare the one claim with a tangible embodiment which is disclosed and which falls within the scope of the other claim. The patent disclosure must not be used as prior art. See *Vogel*, 422 F.2d at 442, 164 USPQ at 622.

- End of Case -

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Ex parte GPAC Inc. (BdPatApp&Int) 29 USPQ2d 1401 (1/26/1993)

Ex parte GPAC Inc. (BdPatApp&Int) 29 USPQ2d 1401

Ex parte GPAC Inc.**U.S. Patent and Trademark Office, Board of Patent Appeals and
Interferences****29 USPQ2d 1401**Decided January 26, 1993
No. 92-2532**Headnotes****NONE****1. Practice and procedure in Patent and Trademark Office--Re-examination--Rules and rules practice (§ 110.1503)****Patentability/Validity -- Obviousness -- Evidence of (§ 115.0906)**

Professional engineer's affidavit, filed in support of patent owner's argument during re-examination that claims for particulate filtration device are not obvious, is not persuasive, since affiant failed to set forth factual basis in support of his conclusion of non-obviousness, since affiant analyzed secondary references individually, and since affiant, in stating that one of ordinary skill in art would not know how to effectively combine references, incorrectly assumed that references must be able to be physically combined.

2. Patentability/Validity -- Obviousness -- Commercial success (§ 115.0908)

Evidence as to amount of royalties collected under patent for particulate filtration device can be relevant in establishing commercial success only if showing is made as to which claims of patent are involved in licensing program, and upon showing of nexus between licensing program and claimed invention.

3. Patentability/Validity -- In general (§ 115.01)

Initial burden of showing that document is "printed publication" is on proponent of document; such burden was satisfied by requestor in first re-examination proceeding who submitted "Micro-Trap" document, and then provided additional information which led Patent and Trademark Office to determine that document is printed publication, and such determination shifts burden, in subsequent re-examination proceeding, to patent owner to establish that document is not printed publication.

Particular patents -- Chemical -- Particulate control and filtering

4,604,111, Natale, method for particulate contamination control and filtration device for reducing airborne asbestos contamination during asbestos removal from building, rejection of claims in re-examination proceeding affirmed.

Case History and Disposition:

Page 1401

Appeal from final rejection of claims (Tim Miles, primary examiner). Request filed Nov. 23, 1990, control no. 90/002,209, for the re-examination of patent no. 4,604,111, issued Aug. 5, 1986, based on a continuation application serial no. 06/323,730, filed Nov. 23, 1981. On appeal from final rejection of claims. Affirmed; Steiner, examiner-in-chief, dissenting in separate opinion. Prior decision: 11 USPQ2d 1222.

Attorneys:

Harvey B. Jacobson Jr., of Fleit, Jacobson, Cohn, Price, Holman & Stern, Washington, D.C., for appellant.

Webster B. Harpman, of Harpman & Harpman, Youngstown, Ohio, for requestor.

Judge:

Before Serota, chairman, and Steiner and W. Smith, examiners-in-chief.

Opinion Text

Opinion By:

Smith, examiner-in-chief.

This is an appeal from the final rejection of claims 1 through 43, all the claims pending in this reexamination proceeding of U.S. Patent No. 4,604,111 ('111 patent).

Claims 1, 8, 42 and 43 are illustrative of the subject matter on appeal and read as follows:

1. A method of establishing a negative pressure environment within an existing building for removing dangerous solid materials from the building, said method comprising:
 - (1) defining an enclosed space within said building using existing wall structure to define at least a portion of said enclosed space;

- (2) establishing at least one flow path for air to enter said enclosed space;
- (3) continuously evacuating air from said enclosed space through a filter means to remove dangerous solid materials from said evacuated air and to establish a negative air pressure in said enclosed space so that air exiting said space passes through said filter means; and
- (4) sealing said flow path against air existing from said air space to the exterior of said enclosed space in the event of loss of negative air pressure in said enclosed space.

8. A system for establishing a favorable environment for removing dangerous solid materials, said system comprising:

wall means enclosing a defined air space within a building, said wall means including

Page 1402

at least one inlet for air to enter said air space and an outlet for air to exit from said air space;

filter means for filtering air in said air space;

air moving means for producing a negative air pressure within said air space and for drawing air into said space through said inlet and for moving air through said filter means in advance of moving air through said outlet; and

sealing means for sealing said inlet against air exiting from said air space to the exterior of said air space in the event of loss of negative air pressure in said air space.

42. A method of establishing a negative air pressure environment within an existing building for removing dangerous solid asbestos materials from the building, said method comprising:

- (1) defining an enclosed space within said building using existing wall structure to define at least a portion of said enclosed space;
- (2) establishing at least one flow path for substantial volumes of air to enter and move through said enclosed space, said flow path being separate from any air leaks into said enclosed space;
- (3) removing the solid asbestos materials within the enclosed space whereby dangerous asbestos fibers become airborne and contaminate the air within the enclosed space;
- (4) continuously evacuating substantial volumes of air from said enclosed space through a high efficiency particulate air (HEPA) filter means and continuously drawing substantial volumes of air into said enclosed space to remove the airborne asbestos fibers from said evacuated air and to establish a negative air pressure in said enclosed space so that the air exiting from said enclosed space passes through said HEPA filter means; and
- (5) sealing said flow path against said contaminated air exiting from said air space to the exterior of said enclosed space automatically upon loss of negative air pressure in said enclosed space.

43. A system for establishing a favorable environment for removing dangerous solid asbestos materials from an existing building, said system comprising:

wall means enclosing a defined air space containing asbestos contamination within said building, said air space also containing airborne asbestos fibers,

said wall means including at least one inlet opening, separate from any breaches in said wall means, for outside air to enter into said air space and at least one outlet opening for air filtered by a filter means to exit from said air space,

high efficiency particulate air (HEPA) filter means for filtering air in said air space;
 high volume air moving means for producing a negative air pressure within said air space and for drawing large volumes of outside air into said air space through said inlet opening and for moving the large volumes of air through said outlet opening, thereby reducing the level of airborne asbestos fibers in said air space; and
 sealing means for sealing off said inlet opening against contaminated air exiting from said air space to the exterior of said air space automatically upon loss of negative pressure in said air space.

The references relied upon by the examiner are:

Merriman	323,587	Aug. 4, 1885
Barbour	1,531,473	Mar. 31, 1925
Strahan	1,623,286	Apr. 5, 1927
Chadirjian et al. (Chadirjian)	1,699,094	Jan. 15, 1929
Kattmann	1,813,703	July 7, 1931
Powers	2,252,784	Aug. 19, 1941
Ruegsegger	3,111,301	Nov. 19, 1963
Whitfield	3,158,457	Nov. 24, 1964
Gedney	3,254,457	June 7, 1966
Fuller	3,384,000	May 21, 1968
Lyons	3,500,655	Mar. 17, 1970
Tarnoff	3,682,084	Aug. 8, 1972

Cook et al., "Dealing With Asbestos Problems", *Asbestos*, Vol. 1, Chapter 8, John Wiley & Sons, pages 279-304 (1979). Asbestos Control Technology, Inc., "MICRO-TRAP", No. 15, pages 13A-13P (1980). *The Random House College Dictionary*, page 1186, Revised Edition (1982).

The claims stand rejected as follows:

- I. Claims 1 through 11, 13 through 15, 18 through 26, 30 through 37, 42 and 43 under 35 U.S.C. Section 103 as unpatentable over the *Asbestos* book in view of any or all of Gedney, Fuller, Strahan, Ruegsegger, Powers, Tarnoff, Merriman or Lyons;
- II. Claims 1 through 11, and 13 through 15 under 35 U.S.C. Section 103 as unpatentable over the *Asbestos* book in view of any of Kattmann, Chadirjian or Barbour;
- III. Claim 12 under 35 U.S.C. Section 103 "as claim 8 above, further in view of Whitfield;
- IV. Claims 17, 18, and 40 under 35 U.S.C. Section 103 as unpatentable over the *Asbestos* book in view of Gedney;
- V. Claims 16, 27, 29, 38, 39, and 41 under 35 U.S.C. Section 103 as unpatentable over the *Asbestos* book in view of either Gedney or Fuller; and,
- VI. Claims 1 through 43 under 35 U.S.C. Section 103 as unpatentable "over the prior art as applied above, further in view of the *MICRO-TRAP* publication."

Page 1403

applied above, further in view of the *MICRO-TRAP* publication."

BACKGROUND

This is the second reexamination proceeding involving the '111 patent. The first reexamination proceeding, Reexamination Control No. 90/001,227, resulted in an appeal to this board, *Ex parte Natale*, 11 USPQ2d 1222 (BPAI 1988). This board reversed all prior art rejections then pending including those which were based upon the *Asbestos* book reference which is the basis of the rejections in this reexamination proceeding. A reexamination certificate was issued in due course which stated that the patentability of original patent claims 1 through 17 was confirmed and that claims 18 through 29 added during that reexamination proceeding were determined to be patentable.

Upon granting of the second request for reexamination of the '111 patent, patent owner added claims 30 through 43. In rejecting the claims involved in this proceeding, the examiner has relied upon a number of secondary references in combination with the *Asbestos* book reference which were not relied upon in the first reexamination of the '111 patent. The examiner is of the opinion that the secondary references bridge the evidentiary gap found to exist in the rejections in the first reexamination proceeding.

OPINION REJECTION I.

The claimed invention is directed to methods and systems for removing dangerous solid materials such as asbestos from a building. To this end, an enclosed space within the building is defined using at least a portion of the existing wall structure and at least one flow path for air to enter this enclosed space is established. Air is to be continuously evacuated from the enclosed space through a filter in order to remove the dangerous solid materials from the evacuated air and to establish a negative air pressure in the enclosed space so that the air exiting from the space passes through the filter means. The air flow path is to be sealed against air exiting from the air space to the exterior of the enclosed space in the event the negative air pressure in the enclosed space is lost. By sealing the air flow path under these circumstances, the dangerous solid material, such as asbestos, is kept within the enclosed space and will not exit and contaminate the adjoining areas.

As will become apparent, the step and means for sealing the air flow path against air exiting from the enclosed space are significant in determining the patentability of the subject matter on appeal. Therefore, the definition of the word "sealed" as used in the context of the present invention as set forth at column 5, lines 38-61 should be kept in mind. 1 The term "sealed" is meant to "indicate that an attempt is made to make the room sealed, but it is not critical that these sealed conditions exist" and that "it should be recognized that one of the prime advantages of my invention is that these seals need not be absolute."

Another aspect of the present invention which should be kept in mind is that the '111 patent discloses and claims in certain of the claims that a suitable sealing means to prevent undesirable back flow from the enclosed space to the exterior of the enclosed space in the event of loss of negative air pressure in the enclosed space is a so-called "flap seal." As described at column 6, lines 38-58 of the '111 patent such a flap seal is a flap of the polyethylene sheeting material which is used in part to define the enclosed space which is larger in all dimensions than the opening over which it hangs. Such a flap seal allows air to enter into the enclosed space under the negative pressure established in the enclosed space but will fall into place and prevent air from escaping in the opposite direction upon loss of the negative pressure in the enclosed space.

The *Asbestos* book reference provides relevant background material to the problems identified and associated with both the handling and removal of asbestos at the time of the present invention. There is no dispute that at this time the dangers of allowing asbestos to escape into the atmosphere of an enclosed space were well known. As set forth on page 285 of the *Asbestos* book reference, "Asbestos is most dangerous when it is in dust form." In discussing controlling asbestos contamination in the context of working with the material on page 287, the *Asbestos* book reference states that strict control of dust formation must be maintained to ensure the safety of the workers. One approach is to prevent dust from being created. However, if this is impractical, a dust control system is required.

The reference states that high-volume, low-velocity control systems have been used such as a suitable hood to extract the dust as

Page 1404

it is formed if the dust is localized. If the dust cannot be localized, the reference states that booths (tents) should be constructed to prevent the dust from escaping. The openings in such booths or tents are stated to be kept as small as possible since wide openings need higher extraction rates. In describing the filter system to be used in such a dust collection system, the *Asbestos* book reference specifically states that fans and motors should be installed after the filter to "ensure that the filtration system is under negative pressure as a safeguard against leaks and to simplify maintenance." The sixth full paragraph of page 287 states that the "extract" should be started before operations are carried out and should be left running for several minutes after completion of the work.2

One overriding thought is conveyed in this reference, i.e., when confronted with the presence of asbestos, whether in the context of working with the material or stripping asbestos insulation materials, the spread of contamination must be minimized. See, e.g., the fourth full paragraph of page 289 and section (6) DEALING WITH AN ASBESTOS PROBLEM on pages 291-292 of this reference.

The operational aspects of stripping asbestos insulation within a given area of an existing building are described on pages 293-296 of the reference. One of the first steps in the standard practice is to sheet off the area where the asbestos is to be removed by using suitable gauge plastic sheeting so as to contain the asbestos in that location. The sheets must overlap and be sealed. The space enclosed by the sheeting should be "kept below atmospheric pressure by an extract fan fitted with an 'absolute' filter"3 which results in the direction of air flow being into the work zone in the enclosed space. The *Asbestos* book reference also states that "it may be necessary to fit ventilation flaps into the tent system at selected locations to improve ventilation in a particular area or where high extraction rates are required" (page 295). This page of the reference also reiterates that "since the chief hazard from asbestos work arises from the generation and spread of dust, dust-control measures are paramount."

Turning to independent claims 1 and 8 first 4, we find that the only significant distinction between the claimed method and system and those disclosed in the *Asbestos* book reference is whether the ventilation flaps which can be fitted into the tent system of the reference would be such that they would "seal" the flow path created thereby against air exiting from the air space enclosed by the tent in the event the negative air pressure in the tent is lost.

Bearing in mind the overriding thought in removing asbestos per the *Asbestos* book reference is to prevent asbestos from escaping outside the enclosed space, we conclude that one of ordinary skill in the art in providing the disclosed ventilation flaps would use flaps that would seal their flow path against air exiting from the air space to the outside upon loss of the negative air pressure in the enclosed space in order to prevent asbestos escaping with the outgoing air. The secondary references relied upon by the examiner provide an ample evidentiary basis for concluding that this person of ordinary skill would be sufficiently skilled to use well-known, ordinary ventilation flaps that seal against unwanted back drafts.

For example, Ruegsegger is directed to anti-back draft dampers used in ventilation systems in buildings. This damper is a pivoted flap which seals against its frame to prevent dust laden air from entering the building. The dampers ultimately close when there is a change in the pressure differential across the opening. See, e.g., column 1, lines 31-50 and column 3, lines 26-34.

Fuller is an example of a back draft damper which is of a flexible nature. Again, the damper is positioned such that it closes upon a change in the pressure differential across the opening.

Powers is another example of a back draft damper which is of special significance since the pivoted damper is opened by suction and automatically swings to a closed position when the pressure differential ceases. See page 2, column 1, lines 3-10. As pointed out at page 2, column 1, lines 38-47, this pivoted damper serves to prevent egress of air therethrough when closed.

Strahan is another example of a back draft damper for ventilating systems which automatically prevents a back draft or outlet of air from the building through the intake

Page 1405

openings. Merriman and Lyons are further examples of such ventilation flaps.

We conclude that one of ordinary skill in the art would have found these types of back draft dampers to have been eminently suitable to serve as the ventilation flaps in the tent system of the *Asbestos* book reference. This hypothetical person would have recognized such dampers or flaps would close automatically upon loss of the negative pressure in the enclosed area of the *Asbestos* book reference and upon closure would provide a "sealing" action preventing asbestos dust from exiting the tent. The ventilation flaps of these references are reasonably pertinent to the problem of providing ventilation flaps in a tent system so that a negative air pressure can be maintained therein, yet prevent spread of a contaminating substance when that pressure differential is disturbed. This problem is common to the *Asbestos* book reference and the present invention. *In re Wood*, 599 F.2d 1032, 202 USPQ 171 (CCPA 1979).

Patent owner argues on page 31 of the Appeal Brief that the claims require an intentionally created air inlet/flow path. The disclosed ventilation flaps in the tent system of the *Asbestos* book reference clearly meet this portion of the claims since a ventilation flap would be considered an intentionally created air inlet/flow path.

Patent owner argues that the *Asbestos* book reference describes no more than a passive system with "below atmospheric pressure" in the work area. However, claims 1 and 8 do not require any particular level of negative air pressure. In any event, the *Asbestos* book reference explicitly states that ventilation flaps are included in the tent system to improve ventilation in a particular area or where high extraction rates are required. As set forth above, the *Asbestos* book reference correlates the size of openings created in a tent or booth used as an enclosure in working with asbestos material with the extraction rate needed to remove asbestos from the enclosed atmosphere. This argument also ignores the disclosure of the reference that the system is to be under negative pressure as a safeguard against leaks. This is the same concept which forms the foundation of the present invention.

Patent owner argues in the paragraph bridging pages 36-37 of the Appeal Brief that the ventilation flaps of the *Asbestos* book reference are not suggested to permit "high volume air flow" to sweep through the work area. First, claims 1 and 8 do not place any quantitative limitation on this amount of air. Second, the *Asbestos* book reference discloses that high extraction rates may be required and if so, ventilation flaps would be needed.

Patent owner also argues that the *Asbestos* book reference does not disclose that the ventilation flaps are to seal against asbestos egress upon loss of negative air pressure. We first observe that it would defy common sense to use ventilation flaps in the tent area of the reference that would allow asbestos material to exit therethrough under *any* circumstances. The *Asbestos* book reference is replete with cautionary notes concerning the extreme danger asbestos dust represents and repeatedly cautions against allowing asbestos dust to escape from the enclosed space defined by the tent or booth which is under negative air pressure. The unspoken argument presented by patent owner is that one of ordinary skill in the art would for some reason put ventilation flaps in the tent system of the *Asbestos* book reference which would *allow* asbestos to escape. The skill of the art must be presumed, not the contrary. *In re Sovish*, 769 F.2d 738, 226 USPQ 771 (Fed. Cir. 1985).

Further, these arguments are premised upon the rejection being based upon the *Asbestos* book reference alone as in the previous reexamination. Here, the new secondary references clearly demonstrate the knowledge possessed by one skilled in the art that ordinary ventilation flaps routinely close automatically upon a change in air pressure in the environment in which they are used and serve to prevent the ingress or egress of an undesired environment. When the applied references are viewed together, this hypothetical person of ordinary skill in the art would understand that the ventilation flaps disclosed to be useful in the tent system of the *Asbestos* book reference should not, under any circumstance, allow asbestos dust to escape. The ventilation dampers or flaps illustrated in the secondary references would be routinely adapted to the specific circumstances of the *Asbestos* book reference system in order to accomplish this function.

Patent owner's response to the secondary references is for the most part an individual critique. Patent owner notes that the back draft dampers and flaps of these references are not used in an asbestos laden atmosphere and that some are disclosed in the specific environment of the secondary reference to open and shut in the "wrong way" as compared with the present system.

Since there is ample motivation to use such conventional ventilation flaps as the specific ventilation flaps in the tent system as the *Asbestos* book reference in view of the dangerous nature of the asbestos material being handled therein, patent owner's arguments

Page 1406

directed to the secondary references individually are not entitled to much weight. As to the specific secondary references which the patent owner characterizes as opening and closing the "wrong way", we point out that the rejections are based upon a combination of the *Asbestos* book reference with the secondary references. The controlling thought in installing the ventilation flaps of the *Asbestos* book reference would be to allow adequate ventilation while preventing the escape of asbestos to the surrounding area. One of ordinary skill in the art would be able to install such conventional anti-back draft dampers in the manner required in order to achieve this purpose. Thus, such dampers or flaps would close upon loss of the air pressure differential across their openings in a manner which would keep airborne asbestos within the tent. See, e.g., Powers.

[1] Patent owner relies upon the affidavit filed under 37 C.F.R. Section 1.132 of Frederick Porcello, a professional engineer, in support of these arguments. We have carefully considered Mr. Porcello's affidavit but do not find it persuasive.

For example, Mr. Porcello states in paragraph 29 of his affidavit:

" [i]t would not be obvious to me, or, in my opinion, to one of ordinary skill in the art, to provide the ventilation flaps with some type of sealing capability, particularly any automatic or instantaneous sealing.

In reaching his conclusion of nonobviousness, Mr. Porcello has not set forth a factual basis in support. *In re Grunwell*, 609 F.2d 486, 203 USPQ 1055 (CCPA 1979). The unspoken argument by Mr. Porcello is that the ventilation flaps used in the tent system of the *Asbestos* book reference would allow asbestos fiber to escape which is in direct conflict with the numerous warnings in the reference. Further, Mr. Porcello critically analyzes the secondary references individually. As set forth in *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981), an affiant must review the references as they are combined to establish the *prima facie* case of obviousness.

Mr. Porcello also states in paragraph 54 of his affidavit that one of ordinary skill in the art would not know how to effectively combine the references. However, this opinion appears to be based upon the assumption that the references need be able to be physically combined. Such is not the law. *In re Keller, supra*. To the extent this opinion is based upon the secondary references showing rigid dampers and flaps, it ignores the flexible flaps used in Fuller.

Patent owner also relies upon the affidavit of William G. Eads, a professional engineer who considers himself an expert in the art of heating, ventilation, and air-conditioning systems. Mr. Eads characterizes the '111 patent as providing "large" air inlet openings into the work area which would draw "large" volumes of air. However, claims 1 and 8 are not limited to any particular size opening or particular volume of air to be drawn into the work area. Thus, the opinions expressed by Mr. Eads appear to be based upon a fundamental misunderstanding as to what is claimed in the '111 patent.

The same can be said for Mr. Eads' analysis of the *Asbestos* book reference. Mr. Eads states in paragraph 17 of his affidavit that the *Asbestos* book reference does not teach or suggest any high volume air flow to sweep through the work area. This is not relevant to claims 1 and 8 since they are not limited in this manner. Further, this opinion does not take into account the disclosure of the *Asbestos* book reference that ventilation flaps are used in the tent system to improve ventilation or where high extraction rates are required. High extraction rates means in the context of the reference the movement of a relatively higher amount of air as opposed to when the ventilation flaps are not used.

Nor do we see that Mr. Eads' observation regarding the number of times the '111 patent has been subsequently cited in other U.S. patents is particularly relevant to the present issues. The mere citation of a patent does not lend further "patentability" thereto.

Mr. Eads states in paragraph 21 of his affidavit that nothing in the secondary references suggests that their back draft preventing flaps and dampers be used to prevent escape of airborne asbestos contamination from removal work areas. He is correct only if the secondary references are read in a vacuum to the exclusion of the *Asbestos* book reference. Mr. Eads has not analyzed these references properly in combination with the *Asbestos* book reference. For example, Mr. Eads has not established why the anti-back draft damper of Ruegsegger which is expressly disclosed to prevent dust from flowing into an environment where it is not wanted in an automatic manner upon pressure disturbance through the opening would not provide the needed sealing function when properly adapted in the air flow path of the *Asbestos* book reference. The various anti-back draft dampers and flaps disclosed in the secondary references appear on their face to "seal" against dust infiltration or exfiltration depending upon one's viewpoint in the same manner as the present so-called flap seals. These flaps and dampers would "seal" to the extent required in the present invention.

We have also considered the affidavit of Robert J. Reichert, a registered patent attorney. Mr. Reichert reviewed the first office action in this reexamination proceeding and has concluded that the references relied upon by the examiner would not have rendered the claimed subject matter obvious under 35 U.S.C. Section 103. We have carefully considered this affidavit but conclude that it, like the other affidavits of record, is entitled to little weight. Like the other affiants, Mr. Reichert has primarily premised his opinion on the patentability issue on the '111 patent providing for "substantial air flow volumes" and "an automatic sealing of the air flow inlet openings of the work area upon the loss of negative air pressure" (paragraph 12). These limitations do not appear in a substantial number of the claims on appeal.

Further, Mr. Reichert has not addressed in his affidavit the overwhelming import of the *Asbestos* book reference to prevent asbestos escaping from the work area and contaminating the surrounding environment. Mr. Reichert's opinion, like the other affiants, appears to underestimate the level of skill in this art. Like patent owner's arguments and the other affiants, the unspoken premise of Mr. Reichert's opinion is that those of ordinary skill in this art would operate the ventilation flaps of the *Asbestos* book reference in a manner that would allow such contamination. Such an assumption defies common sense and ignores the substantial evidence provided by the references relied upon by the examiner.

To the extent Mr. Reichert considered the references applied by the examiner conjointly in paragraph 18, he has not supplied any factual basis for his conclusion that the anti-back draft dampers and ventilation flaps of the secondary references would not have been considered obvious expedients by one of ordinary skill in the art in implementing the disclosure of the *Asbestos* book reference that ventilation flaps can be used to increase the extraction rate within the tent system.

Patent owner also relies upon objective evidence of nonobviousness. Patent owner asserts that the '111 patent is a commercial success and has been recognized and copied by others in this industry. Reliance is placed upon the Porcello affidavit as well as the affidavit of Eugene E. Newman, an officer of the present assignee.

[2] The sole argument presented as to why the '111 patent is a commercial success is based upon the amount of royalties collected under this patent. However, in reciting the licensing history of this patent in his affidavit, Mr. Newman has not established precisely what claim(s) of the '111 patent is involved in this licensing program. Mr. Newman has not established any nexus between the licensing program and the claimed invention. Thus, it is not possible on this record to determine how relevant this evidence is to the claimed subject matter.

In evaluating the licensing activity proffered as evidence of commercial success, we are mindful of the statement in *EWP Corp. v. Reliance Universal, Inc.*, 755 F.2d 898, 225 USPQ 20 (Fed. Cir. 1985):

When, as happened here, the PTO issues a patent because the examiner did not consider prior art teaching the very technique essential to the claimed invention . . . it is not unusual to see astute businessmen capitalize on it by erecting a temporarily successful licensing program thereon. Such programs are not infallible guides to patentability. They sometimes succeed because they are mutually beneficial to the licensed group or because of business judgments that it is cheaper to take licenses than to defend infringement suits, or for other reasons unrelated to the unobviousness of the licensed subject matter. Such a "secondary consideration" must be carefully appraised as to its evidentiary value and we have tried to do that here.

Here, the patent examiner did not consider the *Asbestos* book reference in granting the original patent. Nor did the patent examiner consider the very relevant secondary references directed to anti-back draft dampers and flaps in issuing the first reexamination certificate. Further, there is no evidence in this reexamination proceeding that these licenses were taken based upon the merits of the claimed invention of the '111 patent as opposed to economic and business considerations. On this record, we find this evidence of commercial success is entitled to little weight.

Patent owner also argues that the subject matter of the '111 patent has been copied by others and is the only system and method that effectively meets the guidelines of the Environment Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA).

As to patent owner's assertions concerning copying of the present invention by others, we are mindful of the statement in *Cable Electric Products, Inc. v. Genmark, Inc.*, 770 F.2d 1015, 226 USPQ 881 (Fed. Cir. 1985):

It is our conclusion that more than the mere fact of copying by an accused infringer is needed to make that action significant to a determination of the obviousness issue. *Accord Vandenberg v. Dairy Equipment Co.*, 740 F.2d 1560, 1567, 224 USPQ 195, 199 (Fed. Cir. 1984), where

Page 1408

copying of a patented device, despite the failure of protracted efforts by the copyist to design a similar device, was found to be an admission of the mechanical superiority of the patented version, but "not strong evidence of nonobviousness." [footnote omitted]

Rather than supporting a conclusion of obviousness, copying could have occurred out of a general lack of concern for patent property, in which case it weighs neither for nor against the nonobviousness of a specific patent. It may have occurred out of contempt for the specific patent in question, only arguably demonstrating obviousness, or for the ability or willingness of the patentee financially or otherwise to enforce the patent right, which would call for deeper inquiry. Even widespread copying could weigh toward opposite conclusions, depending on the attitudes existing toward patent property and the accepted practices in the industry in question. It is simplistic to assert that copying per se should bolster the validity of a patent.

On this record, we conclude the evidence of copying is entitled to little weight since patent owner has not provided any evidence which puts this issue in the needed context. Mere assertions of copying, as here, are not persuasive.

While Mr. Porcello and Mr. Newman conclude that the EPA and OSHA guidelines were adopted based upon the invention of the '111 patent, the affidavits do not support these conclusions with any objective evidence. Similar information regarding asbestos removal in a tent system under negative air pressure having ventilation flaps was publicly available through the *Asbestos* book reference. Thus, the particular background information used to promulgate these rules is not seen to be particularly relevant to the present patentability issues.

In essence, the proffered evidence amounts to repetitive opinion affidavits having little, if any, factual support. Such evidence is entitled to little weight. *In re Vamco Machine & Tool, Inc.*, 752 F.2d 1564, 224 USPQ2d 617 (Fed. Cir. 1985).

Reviewing patent owner's evidence of nonobviousness anew in its entirety and balancing it against the evidence of obviousness relied upon by the examiner, we conclude that the evidence of nonobviousness is of insufficient weight to outweigh the evidence of obviousness. Therefore, we conclude that the subject matter of claims 1 and 8 as well as 6, 7, 9, 10, 11, and 13 through 15 would have been obvious to one of ordinary skill in the art.

Patent owner argues on page 59 of the Appeal Brief the requirement of claim 2 (Group B) on appeal that the air evacuated from the enclosed space passes adjacent to a high level of dangerous solid materials within the enclosed space is not found or suggested in the references cited. We disagree. The purpose of the *Asbestos* book reference is to exhaust the air inside the enclosed space or tent through the absolute filter to remove airborne asbestos. Such evacuated air would of necessity pass adjacent the asbestos material being removed.

Patent owner also argues the evacuation rates set forth in dependent claims 3 through 5 (Group C) are not disclosed in the references. While the numerical ranges claimed are not explicitly disclosed, the *Asbestos* book reference clearly discloses the relationship between the size of openings in an enclosed space or tent where asbestos is present and the extraction rate which is needed for removing and filtering the air within the enclosed space. See page 287. The rate of evacuation of air or the extraction rate would be a result effective variable. As such, the precise rate of evacuation of air or the extraction rate for a given system or tent erected for the purposes of removing dangerous asbestos material per the *Asbestos* book reference would be routinely optimized. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). We note that patent owner in making the separate arguments of claims 3 through 5 does not assert that the numerical ranges set forth in these claims represent the so-called "large" extraction rates on which the Porcello and Eads affidavits are premised.

The Group F claims, claims 18, 22, and 24 through 26 are stated on pages 17-18 of the Appeal Brief to be generally similar to the claims of Group A but emphasize the substantial higher volume air flow continuously drawn into the work area and the automatic sealing of the flow path. Patent owner argues on page 60 of the Appeal Brief that there is no suggestion of continuously evacuating substantial volumes of air through a filter means from the enclosed space to remove the airborne, dangerous asbestos solid materials. Again, these arguments ignore the disclosure of the *Asbestos* book reference that high extraction rates can be used in a tent system containing asbestos in order to remove airborne asbestos contaminants within that enclosed space. As to the separate arguments directed to the Group G claims, claims 19 through 21, see the above comments concerning claims 3 through 5.

The Group H claim, claim 23, requires the evacuating and drawing step be continuously

Page 1409

performed until the fiber content of the airborne dangerous asbestos solid material is no greater than 0.01 fibers per cubic centimeter. Again, the whole purpose of the *Asbestos* book reference is to draw the air within the tent enclosure of that system through an absolute filter in order to remove airborne asbestos contamination. The determination of what would be considered an appropriate level of residual asbestos fiber content in the air would be well within the skill of the artisan. The filter system of the *Asbestos* book reference would be operated in the manner needed to provide a safe environment. To conclude otherwise would again underestimate the skill in this art.

The Group J claims, claims 30, 34, 36, 37, 38, 42, and 43, are said to be separately patentable in that they emphasize the air flow or air inlet is intentionally created and that the sealing of the flow path is done in an automatic and immediate manner upon loss of negative air pressure in the enclosed space. As explained above, the prior art relied upon by the examiner directly suggests both features of these claims. The *Asbestos* book reference describes the use of ventilation flaps. Such flaps would be an intentional breach of the tent system and not mere leakage. The various anti-back draft dampers and flaps of the secondary references relied upon by the examiner automatically and immediately shut when the pressure drop across them drops. Again, one of ordinary skill in the art would appreciate in which direction the pressure drop occurs in the tent system of the *Asbestos* book reference when ventilation flaps are provided. Those of ordinary skill in the art would be well skilled to provide anti-back draft dampers or flaps which automatically shut and seal in an immediate manner in order to prevent asbestos material from exiting the enclosed tent space per the secondary references.

The Group K claims, claims 31 through 33 again recite the extraction rates which are discussed above in relation to claims 3 through 5.

The Group L claim, claim 35 is also directed to operating the system until the airborne dangerous asbestos solid material weighs no greater than 0.01 fibers per cubic centimeter. This limitation has been discussed *supra*.

Rejection I is affirmed.

REJECTION II.

This rejection involves claims 1 through 11 and 13 through 15. The references relied upon by the examiner are the *Asbestos* book reference in view of the so-called tent flap references, Kattmann, Chadirjian, and Barbour.

In making this rejection the examiner has determined that the description in the *Asbestos* book reference of a method and system of removing asbestos from a building involving the tent system when fitted with the disclosed ventilation flaps meets the method and system set forth in claims 1 and 8 on appeal with the exception that the *Asbestos* book reference does not explicitly state that the ventilation flaps seal the flow path against air exiting the tent in the event of loss of the negative air pressure.

The examiner has relied upon Barbour, Chadirjian, and Kattmann for their disclosure of ventilation flaps in tents. The examiner has determined that the flaps in these tents which serve to ventilate the tents would "seal" in a manner such that they prevent the flow of an undesired atmosphere through the opening covered by the flap due to the fact that the flaps of the references are slightly oversized in relation to the openings with which they are associated.

We agree with the examiner's conclusion that one of ordinary skill in the art in viewing the *Asbestos* book reference together with Kattmann, Barbour, and Chadirjian would have found it obvious to ensure the ventilation flaps in the tent system of the *Asbestos* book reference would isolate one environment from another by making the ventilation flaps slightly oversized in comparison with the opening in the tent with which they are associated in the *Asbestos* book reference per the secondary references. Bearing in mind that the '111 patent does not require any particular degree of "sealing" in this regard, the tent flaps of the secondary references do provide a sealing function, i.e., they protect the tent interior from infiltration of the outside environment.

Patent owner argues on page 40 of the Appeal Brief that there is no disclosure that these flaps provide any seal whatsoever. We disagree. Due to their size relative to the opening with which they are associated, the flaps do serve to "seal" the interior of the tent from the outside atmosphere. Claims 1 and 8 call for nothing more.

Patent owner, Porcello, and Eads state that the flaps in the secondary tent references are positioned in the wrong way as compared with the present invention. This position is again based upon viewing the secondary references by themselves. The rejection is based upon the *combined* disclosure of these references with the *Asbestos* book reference. The *Asbestos* book reference states that ventilation flaps may be used in

Page 1410

the tent system of that reference. These ventilation flaps would be positioned to open inwardly in the tent system under the influence of the negative air pressure disclosed to exist within that system when the absolute filter is operating. Thus, the primary reference relied upon by the examiner, the *Asbestos* book reference, of necessity discloses the "correct" way of arranging the flaps. The examiner has relied upon the secondary tent references only to show that those of ordinary skill in the art were well aware of "tent" flaps which serve a ventilation purpose and serve to "seal" against an undesired environment infiltrating through their ventilation opening.

We have considered anew the evidence of nonobviousness relied upon by patent owner, i.e., the Porcello, Eads, Reichert, and Newman affidavits. For the reasons set forth above in Rejection I, we do not find this evidence is entitled to much weight. Specifically, Porcello and Eads base their opinions upon viewing the references individually. They have not properly accounted for the disclosure of the *Asbestos* book reference that ventilation flaps can be used in the tent system of that reference to provide high extraction rates. Nor have they taken into account that the reference is concerned with the same dangerous substance as the present invention and that the overriding consideration in the *Asbestos* book reference is to keep the asbestos dust contained within the tent system.

In regard to the Newman affidavit, Mr. Newman has not correlated the licensing program discussed in his affidavit with any specific claim on appeal. It is not possible on this record to determine which claim, if any, is relevant in these licenses. Further, as set forth above, merely alleging licensing of an invention and/or copying of the invention by others is not entitled to significant weight.

Weighing patent owner's evidence of nonobviousness anew in its entirety against the evidence of obviousness relied upon by the examiner in this rejection, we find that the evidence of nonobviousness is insufficient to outweigh the evidence of obviousness.

Rejection II is affirmed.

REJECTION III.

Claim 12 depends from claim 8 and requires a barrier deflection means be placed in an air space to cause air entering the space to flow past a source of a high level contamination before entering the filter means. The examiner has relied upon Whitfield in addition to the references relied upon the Rejections I and II in rejecting this claim.

Whitfield is directed to a so-called ultra-clean room in which air is circulated at a high rate so that the incoming air performs a sweeping function over the working areas. This sweep air exits through submicron filters to remove dust particles. As set forth at column 10, lines 49-58, air-diffusing means can be associated with the inlet for the sweep air in order to ensure that the sweep air is of equal velocity and volume throughout the entire working area.

Whitfield fairly discloses the concept of deflecting or directing air which is to sweep dust out of an environment to the location where it is needed. In Whitfield, this is the entire room. We agree with the examiner that one of ordinary skill in the art would have found it obvious to provide appropriate deflectors or diffusers in the tent system of the *Asbestos* book reference to guide the air within the tent system to the locations therein where asbestos dust is being generated in order to assist its removal under the negative air pressure through the absolute filter of that reference.

Mr. Porcello states in paragraph 45 of his affidavit that Whitfield does not disclose a deflection barrier to divert air in any manner. We disagree. The reference clearly discloses the use of diffuser grids to deflect or direct incoming air over the entire room in order to provide the sweeping function desired in that reference.

Patent owner has not explained on this record how the licensing activity and/or copying by others pertains specifically to the subject matter of claim 12. Accordingly, this evidence is entitled to little, if any, weight in regard to this rejection.

Rejection III is affirmed.

REJECTION IV

Claims 17, 28, and 40 require that the inlet includes at least one opening of a size and shape to allow a person to step through the inlet covered by the flexible film flap. The examiner relies upon Gedney for its disclosure of such a flexible flap door.

Gedney discloses an inflatable tent-like structure made of a flexible film of low air permeability. An equilibrium air door is provided which comprises a flap of flexible material sufficiently large to permit vehicle or pedestrian traffic therethrough. When the tent structure is being inflated, the equilibrium air door opens inwardly to the tent under the influence of the higher air pressure generated by the fan used to inflate the tent structure. As set forth at column 15, lines 15-21, once the structure is inflated, the air equilibrium door is moved into the closed

Page 1411

position due to the air pressure within the structure which is exerted on the internal surface of the flexible flap. See Figure 2 of the reference which illustrates the equilibrium air door in its opened and closed position.

We agree with the examiner that one of ordinary skill in the art, viewing the *Asbestos* book reference and Gedney together, would have found it obvious to design the ventilation flaps of the *Asbestos* book reference to include those having a size sufficient to allow a person to enter and exit the tent system. The equilibrium air door or flexible flap entrance of Gedney serves the same function as the other flaps or dampers disclosed in the various other references relied upon by the examiner, i.e., it will open under the influence of a pressure change to allow air to enter in a desired direction while closing when the change in air pressure is disturbed to prevent the reversal of air flow.

Patent owner as well as affiants Porcello and Eads state that the equilibrium air door of Gedney does not serve to provide a seal against air movement. However, none of these statements are supported by any factual evidence. Further, these statements view Gedney by itself and not in combination with the *Asbestos* book reference as combined by the examiner. Again, the *Asbestos* book reference clearly states ventilation flaps can be used in the tent system of that reference. The tent system of that reference is designed to keep asbestos dust within the tent by use of negative air pressure in association with the absolute filter. Gedney is relevant in that it shows flexible flaps which operate under the influence of changing air pressure which are sized so that the vehicle or pedestrian traffic can enter and exit. To whatever extent it may be said that the equilibrium door in Gedney does not "seal", in adapting such a concept to the tent system of the *Asbestos* book reference, one of ordinary skill in the art would surely ensure that upon closure of such a large flap, asbestos laden air would not be permitted to exit the tent to contaminate the surrounding area.

Again, patent owner has not explained with any specificity how the evidence of nonobviousness pertains to the subject matter of these dependent claims.

Rejection IV is affirmed.

REJECTION V.

Claims 16, 27, 29, 38, 39, and 49 require that the sealing means comprise a flexible film flap.5

The examiner relies upon Gedney and Fuller for their disclosure of flexible films used to seal openings and thus prevent an undesirable reversal of air flow therethrough.

We agree with the examiner's conclusion that one of ordinary skill in the art, viewing these references together, would have found it obvious to provide the ventilation flaps in the tent system of the *Asbestos* book reference as flexible film flaps which serve to prevent an undesirable reversal of air flow from with the tent system of the *Asbestos* book reference to the outside in order to prevent contamination of the outside atmosphere with dangerous asbestos dust.

Our analysis of the affidavits and objective evidence of nonobviousness of record in regard to these claims is the same as in regard to the subject matter covered by Rejection I. For those reasons, we find this evidence not to be entitled to sufficient weight to outweigh the evidence of obviousness relied upon by the examiner.

Rejection V is affirmed.

REJECTION VI.

In this rejection, the examiner has in essence repeated rejections I through V while additionally relying upon a document which has been entitled MICRO-TRAP. As developed in this reexamination proceeding, a threshold issue in this rejection is whether the MICRO-TRAP document can be considered a printed publication.

To decide whether the MICRO-TRAP document is a printed publication, it is necessary to review part of the proceedings in the first reexamination of the '111 patent since the examiner states on page 23 of the Examiner's Answer that the record of the first reexamination establishes MICRO-TRAP to be a printed publication. Specific reference is made in the Examiner's Answer to pages 9 and 10 of the requestor's July 9, 1987, "Petition For Review Of Denial For Request Reexamination" in the first reexamination proceeding (Paper No. 6 of that file).

The first request for reexamination was initially denied by the examiner assigned to make that determination. Part of the denial was that the MICRO-TRAP document submitted with the request was not considered to be a printed publication. As originally submitted,

Page 1412

this document comprised a first page describing the use of a absolute or HEPA filter in asbestos removal projects by Duall Maintenance Company. The MICRO-TRAP unit is stated to be available from Asbestos Control Technology Inc. The record in the first reexamination proceeding as well as this reexamination proceeding indicates that the inventor of the '111 patent, Anthony Natale; the present assignee of the '111 patent, GPAC Inc.; Duall Maintenance Company, and Asbestos Control Technology Inc. are all related entities.

The second page of the MICRO-TRAP document originally submitted is a schematic wiring diagram for the MICRO-TRAP unit which is dated July 20, 1980. Pages 3 through 5 of this document include operating instructions for the MICRO-TRAP unit. Attached to the originally submitted copy of this document is (1) a series of price lists from Asbestos Control Technology Inc. for MICRO-TRAP units and various supplies needed in asbestos removal projects; (2) purchase orders from a company identified as ICONCO of California ordering MICRO-TRAP units and other supplies from Asbestos Technology Inc.; (3) invoices of Asbestos Technology Inc. indicating shipment of MICRO-TRAP units, and (4) the ordered supplies and cancelled checks from ICONCO of California indicating payment of these orders.

Upon the examiner's initial determination that the MICRO-TRAP document was not a printed publication in the first reexamination proceeding, requestor submitted with the above referenced petition an Exhibit C to establish that the MICRO-TRAP document itself was a printed publication having a publication date no later than July 23, 1980. Exhibit C (copy attached to this decision [omitted]) is a letter dated July 23, 1980, from a Mr. James H. Oetter, Jr. to Mr. George Smart. George Smart is identified in requestor's petition as the architect who prepared the invitation for bid for removing asbestos material at the General Mail Facility in Greensboro, North Carolina. The letter from Mr. Oetter thanks Mr. Smart for the time he extended to him when Mr. Oetter called upon Mr. Smart to discuss "our MICRO-TRAP." The letter states "as discussed enclosed you will find literature on the MICRO-TRAP." Attached to the letter is a copy of pages 1, 3, 4, and 5 of the MICRO-TRAP document originally presented with the reexamination request. The circuit diagram which is part of the originally submitted MICRO-TRAP document is not included as part of Exhibit C.

This record also establishes that James Oetter was working for Asbestos Technology Inc. For example, the Asbestos Technology Inc. invoices attached to the originally submitted MICRO-TRAP document state that a J. Oetter was the salesman for these orders.

In a decision mailed August 6, 1987, (Paper No. 7 in the first reexamination proceeding), the Examining Group Director granted the petition and ordered reexamination of the '111 patent. In pertinent part, the Group Director determined that requestor had established that the MICRO-TRAP document, identified as Document 13 in the petition, was a printed publication.

[3] We agree with patent owner that the initial burden of establishing a document to be a printed publication under the patent laws is on the proponent of the document. Here, the proponent was the requestor in the first reexamination proceeding. This requestor provided additional information to establish this fact in the form of Exhibit C when the original patent examiner concluded that the originally submitted MICROTRAP publication was not a printed publication. The Patent and Trademark Office then determined that the additional information provided in Exhibit C established a reasonable basis to conclude that, at the least, the text portion of the MICRO-TRAP document was a printed publication no later than July 23, 1980. We find no basis on this record to disagree with this conclusion.

The letter from Mr. Oetter to Mr. Smart in which the MICRO-TRAP document was enclosed provides evidence that this document was being distributed by a company associated with the present inventor and patent owner as sales literature in the normal course of business no later than July 23, 1980. Patent owner's position on whether this document is a printed publication is merely to argue that the patent examiner has the initial burden of establishing this document as a printed publication. However, patent owner's arguments do not take into account Exhibit C and the Patent and Trademark Office's ultimate determination that MICRO-TRAP is a printed publication. This determination shifts the burden to patent owner to establish that the MICRO-TRAP document is not a printed publication. Since Mr. Oetter was working on behalf of Asbestos Control Technology Inc., a company which is controlled by or related to the present inventor and/or patent owner, patent owner is in the best position to ascertain and make of record the relevant facts concerning the MICRO-TRAP document. As the record now stands, it is reasonable to conclude that this document was being distributed in the

Page 1413

normal course of business of selling MICRO-TRAP units by Asbestos Control Technology Inc. no later than July 23, 1980. We agree with the examiner that the MICRO-TRAP document is a printed publication and can be relied upon in determining the patentability of the claimed subject matter in this reexamination proceeding.

Turning to the merits of these rejections, we agree with the examiner that this publication further buttresses the case of obviousness established by the other references relied upon in the rejections. The MICRO-TRAP publication reiterates that air flow within the work area in which asbestos is being removed must be controlled to keep potential contaminants in the work area in order to prevent their spreading throughout the entire building. The so-called exhaust theory ventilates the work area with the air exiting through the MICRO-TRAP unit, a HEPA filter. While this document may be considered cumulative to the *Asbestos* book reference, it does establish that one of ordinary skill in the art at the time of the present invention was well aware of the importance of ventilating the work area using a HEPA filter in order to prevent asbestos fiber contamination escaping the work area.

The MICRO-TRAP document also discloses in Section 3.(A) of the "How To Use" section that an air turnover rate of fifteen minutes is desirable which is in the middle of the preferred range of the '111 patent. The MICRO-TRAP document also states in clause d. of the last page that the MICRO-TRAP filter unit can be used for other purposes, e.g., removing welding fumes. This is further evidence that those of ordinary skill in the asbestos removal art were well aware of other similar ventilation problems and would have routinely consulted other art areas where similar ventilation problems occur, *In re Wood, supra*. This buttresses the examiner's reliance upon the numerous secondary references from the ventilation art in general which establish the use of anti-back draft dampers or flaps to be well known in this field.

Patent owner argues on page 9 of the Reply Brief that the air turnover rate in the MICRO-TRAP publication "may result from recirculation within the work area." However, the MICRO-TRAP publication states on the first page that the MICRO-TRAP unit is used in such a manner that it ventilates the work area which eliminates the need for air-fed respirators. This is a clear indication that the unit is pulling fresh air into the work area from outside the work area as in the present invention and the *Asbestos* book reference. The subsequent discussion of air turnover in the document reasonably appears to be in the same context as in the present invention.

Rejection VI is affirmed.

THE DISSENT

In asserting the absence of a *prima facie* case of obviousness, the dissent focuses primarily on the disclosure of the *Asbestos* book reference. However, the rejections before us for review are based upon the combined disclosures of the *Asbestos* book reference and the various secondary references. The dissent states that none of the secondary references deal with the problem of external contamination of any type upon loss of negative pressure or disclose a sealing means responsive to loss of internal negative pressure.

As to the problem of external contamination upon loss of negative pressure, we point again to the *Asbestos* book reference for its disclosure that asbestos removal is to take place within a tent system having ventilation flaps which is operated under negative air pressure. The *Asbestos* book reference clearly conveys the concept that such an asbestos removal system must be operated in such a manner that external contamination of any type must be avoided. See also the MICRO-TRAP document. Powers and Strahan are two secondary references which disclose ventilation flaps which seal in response to loss of internal negative pressure. When the *Asbestos* book reference is considered *together* with such secondary references, we conclude that one of ordinary skill in the art would have been readily led or motivated to use such conventional ventilation flaps as those disclosed to be useful in the *Asbestos* book reference.

The dissent raises the question of what is the level of skill in this art. As set forth in *Custom Accessories Inc. v. Jeffrey-Allan Industries Inc.*, 807 F.2d 955, 1 USPQ2d 1196 (Fed. Cir. 1986):

The person of ordinary skill in a hypothetical person who is presumed to be aware of all the pertinent prior art. The actual inventor's skill is not determinative. Factors that may be considered in determining level of skill include: type of problems encountered in art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and education level of active workers in the field. Not all such factors may be present in every case, and one or more of them may predominate.
[citations omitted].

Page 1414

Both Porcello in his affidavit and the dissent emphasize the education level of this hypothetical person. As set forth above, the education level of workers in the field is but one consideration. Here, the references of record provide the best evidence as to the level of ordinary skill in this art. The *Asbestos* book reference is very relevant in this regard, showing that this hypothetical person was sufficiently skilled to remove asbestos by constructing a tent system having ventilation flaps and operated under a negative air pressure such that airborne asbestos within the tent system exits through the absolute filter. We do not find the level of skill in this art area to be so low that this hypothetical person would use the ventilation flaps in the tent system of the *Asbestos* book reference under circumstances that would allow escape of asbestos fibers. We conclude that this hypothetical person would have readily recognized the use of ventilation flaps such as those disclosed in the secondary references in the tent system as the *Asbestos* book reference would properly serve to seal upon loss of the negative air pressure in the tent system of the reference and prevent the exit of asbestos fibers.

The dissent considers the evidence deficient in establishing that the MICRO-TRAP document was accessible to the public. As pointed out above, this record establishes that this document was being disseminated to the public as sales literature by an employee/representative of patent owner. The burden is properly shifted to patent owner to establish this document is not a printed publication. This document is "real world" evidence that the concepts underlying the present invention were publicly available prior to the effective filing date of the '111 patent.

The dissent questions whether our affirmance of the examiner's decision amounts to a new ground of rejection in that we gave further reasons why patent owner's rebuttal evidence was insufficient. We disagree. Here, in contrast to the circumstances in *In re DeBlauwe*, 736 F.2d 699, 222 USPQ 191 (Fed. Cir. 1984), both the examiner and the Board considered the evidence of record. Patent owner was apprised by the examiner's actions that the evidence of record was not a sufficient rebuttal of the obviousness rejections of record. That we gave further reasons and cited precedent in support of the examiner's decision in this regard does not amount to a new ground of rejection.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR 1.136(a). See the final rule notice, 54 F.R. 29548 (July 13, 1989), 1105 O.G. 5 (August 1, 1989).

The decision of the examiner is affirmed.

AFFIRMED

Steiner, member, dissenting.

I respectfully disassociate myself from the majority's decision. In my opinion, the examiner committed clear reversible error in rejecting the appealed claims under 35 U.S.C. 103.

THE INVENTION

In resolving the ultimate legal conclusion of obviousness under 35 U.S.C. 103, it is necessary to look back at the state of the art of asbestos removal in the *real world* at the time of the invention disclosed and claimed in the '111 patent, as established by the objective evidence of record. *Panduit Corp. v. Dennison Mfg. Co.*, 774 F.2d 1082, 227 USPQ 337 (Fed. Cir. 1985), vacated, 475 U.S. 809, 229 USPQ 478 (1986), aff'd on remand, 810 F.2d 1561, 1 USPQ2d 1593 (Fed. Cir. 1987). At that time, the asbestos removal industry utilized a "passive system" recommended by the Environmental Protection Agency (EPA), which required a work area to be completely sealed off purposely avoiding the creation of any air inlets.6

The claimed invention proceeded against the tide of conventional wisdom 7 by intentionally providing a sufficiently large opening in a work area to create an air flow path capable of permitting large volumes of air to enter and sweep the work area clean of minute airborne asbestos fibers with the aid of negative air pressure. 8 The creation of such a large air inlet *necessitated* the provision

Page 1415

of means to seal off the inlet "in the event of loss of negative air pressure in the enclosed space."9 The objective evidence proffered by the patent owner (appellant) supports the conclusion that the claimed invention revolutionized the asbestos removal industry -- it is the only system satisfying current EPA and United States Safety and Health Administration guidelines, 10 and enjoyed considerable commercial success" 11 in spite of the futile attempts of others economically motivated to develop an alternative acceptable procedure.12

Fundamental Errors

A number of issues involving factual and legal questions arise in this appeal. However, brevity is best served by focusing on three fundamental errors, any one of which mandates reversal of every rejection. Specifically, the examiner committed clear reversible error in:

- (I) concluding that that claimed invention was *prima facie* obvious;
- (II) ignoring objective evidence relating to the level of ordinary skill in the art; and
- (III) failing to accord probative weight to the objective evidence relating to secondary considerations.

I: The Absence of a Prima Facie Case of Obviousness.

The initial burden of establishing a *prima facie* basis to deny patentability to a claimed invention rests upon the examiner. *In re Oetiker*, ____ F.2d ___, 24 USPQ2d 1443 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 223 USPQ 785 (Fed. Cir. 1984). In rejecting a claim under 35 U.S.C. 103, the examiner must provide a *factual* basis to support the obviousness conclusion. *In re Warner*, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967); *In re Lunsford, supra*; *In re Freed*, 425 F.2d 785, 165 USPQ 570 (CCPA 1970). Based on the objective evidence of record, the examiner is required to make the factual inquiries mandated by *Graham v. John Deere of Kansas City*, 383 U.S. 1, 17, 148 USPQ 459, 469 (1966). ¹³ The examiner is also required to explain *why* one having ordinary skill in the art would have been led to modify and/or combine the applied prior art to arrive at the claimed invention. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988).

Claims 1 (method) and 8 (apparatus) are concededly the broadest claims on appeal and of essentially the same scope. For convenience, I shall focus on claim 1 directed to a method comprising enclosing a space within a building and continuously evacuating the enclosed space via negative air pressure through a filter. Of particular significance are the requirements in claim 1 for:

1. intentionally creating an air "flow path"; and
2. sealing said flow path against air exiting from said air space to the exterior of said enclosed space *in the event of loss of negative air pressure* in said enclosed space.

I stress that claim 1 not only calls for the intentional creation of an opening having sealing means, but requires the sealing means to function *in response to* a loss of negative pressure.¹⁴

The primary reference, the *Asbestos* book, discloses a method wherein a sealed air space under negative air pressure is defined within a building. *Optional* ventilation flaps are mentioned. The examiner construed all the appealed claims to be of such broad scope as to encompass the disclosed optional "ventilation flaps" as intentionally created openings generating air flow paths.¹⁵ In my opinion,

Page 1416

the obviousness of the claimed invention does not pivot about the correctness of this legal conclusion. ¹⁶ However, it is relevant to the obviousness issue to recognize that according to uncontroverted evidence, ¹⁷ the responsive sealing means is *necessitated* by the creation of a *large* opening.

The principal distinction between the claimed invention and the *Asbestos* book which earned the most attention by the examiner is the recited sealing means responsive to a loss of negative air pressure. However, it is misleading merely to state that it is the only difference. A realistic assessment of the lacuna between the claimed invention and the applied prior art requires findings as to what the *Asbestos* book *does not disclose*.

The *Asbestos* book fails to provide any particulars with respect to the size of the optional ventilation flaps, their precise function ¹⁸ or how they operate. Significantly, the *Asbestos* book is *utterly devoid of any mention of*

1. *any sealing means* in connection with the optional ventilation flaps;
2. a potential *problem* arising from a loss of negative pressure; and, therefore,
3. *any nexus* between a possible loss of negative pressure and the ventilation flaps.

The secondary references ¹⁹ do not remedy the shortcomings of the *Asbestos* book since not one of them:

4. deals with the *problem* of external contamination of any type upon loss of negative pressure; or
5. discloses a sealing means *responsive to the loss* of internal negative pressure.

Such silence in the applied prior art is no substitute for the factual support upon which the obviousness conclusion must rest. *In re Burt*, 356 F.2d 115, 148 USPQ 548 (CCPA 1966). I emphasize that *not a single applied reference* mentions the potential *problem* of external contamination of any type resulting from a loss of negative air pressure. Absent a recognition in the art of a potential problem, it is difficult to perceive whence stems the requisite motivation to take preventive action. *In re Meng*, 492 F.2d 843, 181 USPQ 94 (CCPA 1974); *In re Shaffer*, 229 F.2d 476, 108 USPQ 326 (CCPA 1956); *In re McKenna*, 203 F.2d 717, 97 USPQ 348 (CCPA 1953); *In re Bisley*, 197 F.2d 355, 94 USPQ 80 (CCPA 1952). Exacerbating the lack of factual support for the obviousness conclusion is a teaching away, at page 297 of the *Asbestos* book, from purposely creating a large opening. 20 In re Hedges, supra; W.L. Gore & Associates, Inc. v. Garlock, Inc., supra; In re Lunsford, supra.

The majority focuses on the "overriding thought," conveyed by the *Asbestos* book, of minimizing external contamination. It cannot be gainsaid that conventional practices in the art, prior to the claimed invention, involved enclosing a work area in plastic to prevent environmental contamination, otherwise asbestos removal would have been performed alfresco. However, the *Asbestos* book lacks any recognition of a potential problem stemming from a loss of negative air pressure, never mentions sealing means on the optional ventilation flaps and, therefore, does not suggest a nexus between a potential loss of negative air pressure and any such sealing means. The majority, armed with the '111 patent in one hand and a creative pen in the other, attempts to fill in the blanks under the guise of "common sense" and its notion of the level of ordinary skill in the art. In my opinion, the majority erred by substituting a perceived level of skill for statutory prior art rather than employing that skill, as established on this record, to interpret prior art. *In re Kratz*, 592 F.2d 1169, 1175, 201 USPQ 71, 76 (CCPA 1979).

Admittedly, the claimed invention is not technologically complex -- it is elegantly simple. However, it is well settled that simplicity is not synonymous with obviousness,

Page 1417

but may evince nonobviousness. *In re Van Wanderham*, 378 F.2d 981, 154 USPQ 20 (CCPA 1967). The obviousness conclusion must be based on facts, regardless of the complexity of the claimed invention. *In re Sporck*, 301 F.2d 686, 133 USPQ 360 (CCPA 1962). The above-enumerated voids in the applied prior art underscore the absence of a sufficient factual basis to support a *prima facie* case of obviousness. *In re Freed, supra; In re Warner, supra; In re Burt, supra*. I would reverse each of the examiner's rejections on that basis. *In re Oetiker, supra.*21

II. The Level of Ordinary Skill in the Art.

One of the factual inquiries mandated by *Graham v. John Deere of Kansas City, supra*, is *the level of ordinary skill in the art*. Presumably, neither the examiner nor the majority have any basis to challenge Para.23 of the Porcello Affidavit, wherein affiant avers:

As a general matter, the level of education is relatively low. Generally, a bachelor's degree in an engineering discipline is not typical. Most persons of ordinary skill in the art have several years of practical, hands-on experience, but little in the way of formal engineering education.

In addition, and quite relevant to the obviousness issue, are the corroborating statements of Porcello 22 and Eads, 23 each undisputedly possessing at least ordinary skill in the art, on the *factual* inquiry of *the level of ordinary skill in the art*-- i.e., how one skilled in the art would have interpreted the optional ventilation flaps mentioned in the *Asbestos* book. *In re Fay*, 347 F.2d 597, 146 USPQ 47 (CCPA 1965). Each of these undisputed experts in the art unequivocally states that it would not be obvious to him to provide seals of any kind on the ventilation flaps mentioned in the *Asbestos* book, and each opines that it would not be obvious to one having ordinary skill in the art to provide such ventilation flaps with some type of sealing means.

The examiner appears to resent such evidence as an attempt to usurp his decision making authority. On page 31 of the Answer, the examiner disposes of appellant's argument that he erroneously substituted his judgment for that of an expert by contending, without precedential support, that *In re Zeidler*, 682 F.2d 961, 215 USPQ 490 (CCPA 1982) "is not applicable to the facts of the present *apparatus* case" (examiner's emphasis). The examiner argues that if the doctrine espoused in *In re Ziedler, supra*, precluding an examiner from substituting his judgment for that of an established expert in the art, were to be applied in all cases, the Office would have to abrogate its statutory mandate to decide questions of patentability to any and every established expert in each art, as would the courts. Also, the opinions of experts advanced by opposing parties would no doubt be divergent.

In my opinion, the examiner's refusal to consider the statements of Porcello and Eads on the level of ordinary skill in the art constitutes clear reversible error.

The majority makes no mention of the examiner's treatment of the affidavit evidence relating to the level of ordinary skill in the art, but goes beyond the Examiner's Answer by summarily dismissing Porcello's "conclusion of nonobviousness" as lacking "a factual basis in support" citing *In re Grunwell*, 609 F.2d 486, 203 USPQ 1055 (CCPA 1979). 24 The statements of Porcello (Para.29) and Eads (Para.15) are not opinions on the ultimate *legal* conclusion of obviousness under 35 U.S.C. 103, but relate to the requisite *factual* inquiry on the level of ordinary skill in the art. These undisputed experts, based on information uniquely within their competence, stated that it would not be obvious to them to provide seals on the ventilation flaps mentioned in the *Asbestos* book. To the extent that these statements can be regarded as opinions, the *facts* upon which they are based (more accurately the absence of facts) are clear from the record and spelled out by Porcello in the sentence immediately preceding his "opinion."25

Page 1418

Porcello and Eads also agree that it would not be obvious to one having ordinary skill in the art to provide such ventilation flaps with some type of sealing capability. The majority disagrees. The bottom line is that the majority locks horns with unchallenged experts on the issue of the level of ordinary skill in the art, which is determined by the *subjective reaction of persons so skilled*. *In re Oelrich*, 579 F.2d 86, 91, 198 USPQ 210, 215 (CCPA 1978); *In re Meng*, 492 F.2d at 849, 181 USPQ at 98.26

We are charged with resolving the legal conclusion of obviousness under 35 U.S.C. 103 based on real world considerations. *Panduit Corp. v. Dennison Mfg. Co., supra*. I would, therefore, place more weight on the opinions of those who have experienced "a greater nearness to the push and sweat of life" 27 as to the level of ordinary skill in the art than that of the majority which is based solely on the cold words of the *Asbestos* book. *In re Oelrich, supra*; *In re Meng, supra*. In my opinion, the majority erred in substituting its opinion for those of undisputed experts on the level of ordinary skill in the art. Compare *In re Zeidler, supra*.

III. Secondary Considerations

All evidence relevant to the ultimate legal conclusion of obviousness under 35 U.S.C. 103 must be given consideration. *In re Oetiker, supra; Loctite Corp. v. Ultraseal Ltd., supra; Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983). Appellant proffered affidavits 28 to establish that the invention covered by the '111 patent has been adopted as a standard in the industry 29 and enjoys considerable commercial success through a successful licensing program, 30 while others in the industry economically motivated to develop alternative acceptable procedures failed in their efforts. 31 The examiner's rather brief treatment of such objective evidence of secondary considerations extends from the bottom of page 51 to approximately the midpoint of page 52 where the Answer ends.

I have difficulty understanding the examiner's evaluation of the objective evidence of nonobviousness. It would appear that the examiner erroneously etched his *prima facie* case of obviousness in stone, rendering it invulnerable to the real world considerations illuminated by appellant's evidence. Such an approach is clearly erroneous. *In re Piasecki, supra; In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976).

The majority again goes beyond the examiner's treatment of the rebuttal evidence, citing two decisions wherein the granting of licenses 32 and copying by others 33 were not sufficient to carry the day for nonobviousness. The majority also downplays the opinion affidavits citing *In re Vamco Machine & Tool, Inc.*, 752 F.2d 1564, 224 USPQ 617 (Fed. Cir. 1985). 34

Certainly, the mere presentation of objective evidence of nonobviousness does not mandate a conclusion of nonobviousness. See, for example, *In re Beattie*, 974 F.2d 1309, 24 USPQ2d 1040 (Fed. Cir. 1992); *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 21 USPQ2d 1053 (Fed. Cir. 1991) In each case, the objective evidence of nonobviousness must be considered and weighed against the evidence of obviousness adduced by the examiner. *In re Oetiker, supra; In re*

Piasecki, supra

. It is of interest to note that in the first full paragraph on page 52 of the Answer, the examiner characterizes the secondary considerations as "impressive." Such "impressive secondary considerations" relating to commercial success, licensing, copying, and the failure of others, must be weighed against prior art unappreciative of any external contamination problem resulting from a loss of internal negative air presence and devoid of any teaching of a ventilation flap having sealing means responsive to the loss of internal negative air pressure. The evidence of secondary considerations paints a more accurate picture of the real world environment at the time the claimed invention was made than that retrospectively recreated by the examiner and embellished by the majority's conception of what the then level of ordinary skill in the art should have been. *Minnesota Mining & Mfg. Co. v. Johnson & Johnson orthopaedics, Inc., supra; Continental Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 20 USPQ2d 1746 (Fed. Cir. 1991); *Panduit Corp. v. Dennison Mfg. Co., supra* . In my judgment, the evidence of nonobviousness confutes the evidence of obviousness, mandating reversal of the examiner's rejection as legally erroneous.

Due Process

The examiner's fleeting treatment of the objective evidence of nonobviousness does not adequately apprise appellant of any perceived shortcoming in the proffered evidence. The majority, for the first time on appeal, introduces reasons challenging the sufficiency of the evidence, leaving appellant helpless to take corrective action in this case.

In my opinion, the majority, under color of an affirmance, in fact imposed a new ground of rejection thereby improperly depriving appellant of the procedural safeguards of 37 CFR 1.196(b). 35 In re De Blauwe, 736 F.2d 699, 222 USPQ 191 (Fed. Cir. 1984); In re Waymouth, 486 F.2d 1058, 179 USPQ 627 (CCPA 1973); In re Eynde, 480 F.2d 1364, 178 USPQ 470 (CCPA 1973). Appellant has a right to cry "foul."

Footnotes

Footnote 1. Claims involved in a reexamination proceeding are to be read as broad as reasonably possible, consistent with the supporting specification. In re Yamamoto, 740 F.2d 1569, 222 USPQ 934 (Fed. Cir. 1984).

Footnote 2. In the context of this book, a reference to high extraction rates means the process of extracting asbestos from the atmosphere within an enclosed booth.

Footnote 3. The '111 patent sets forth at column 2, lines 48-60 that "absolute" filters and the HEPA filters used in the present invention are one and the same.

Footnote 4. Claims 1 and 8 are representative of the Group A claims, claims 1, 6 through 11, and 13 through 15, argued together by patent owner.

Footnote 5. Claim 38 is included in this rejection which only requires that the temporary wall of the wall means which encloses the defined air space be a flexible film wall. The *Asbestos* book reference clearly discloses this concept. It appears the examiner's inclusion of this claim in this rejection is an inadvertent error.

Footnote 6. Porcello Aff. Para.18; the '111 patent, column 2, lines 3 through 9. Note column 1 of the '111 patent, lines 40 through 46, wherein it is reported that

[a] typical requirement standard of requiring that the area "settle" for 24 hours before allowing persons to re-enter in order to clean up settled asbestos fibers is clearly insufficient for protection. The thinner fibers remain airborne for up to 80 hours and it is now clear that re-entry into the room stirs up the fibers to pose the same hazard.

Footnote 7. Porcello Aff., Para.19. It has been held that proceeding against conventional practices constitutes evidence of nonobviousness. In re Hedges, 783 F.2d 1038, 228 USPQ 685 (Fed. Cir. 1986); W. L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983); In re Lunsford, 357 F.2d 385, 148 USPQ 721 (CCPA 1966).

Footnote 8. Porcello Aff., Para.13; Eads Aff., Para.11.

Footnote 9. Porcello Aff., Para.14; Eads Aff., Para.12.

Footnote 10. Newman Aff., Para.10.

Footnote 11. Newman Aff., Paragraphs 4, 7 through 9, and 13.

Footnote 12. Porcello Aff., Paragraphs 20 and 21.

Footnote 13. Failure to make the requisite factual inquiries constitutes reversible error. *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986); *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 228 USPQ 90 (Fed. Cir. 1985); *Jones v. Hardy*, 727 F.2d 1524, 220 USPQ 1021 (Fed. Cir. 1984). I find no express factual inquiries as required by *Graham v. John Deere of Kansas City, supra*, in the Answer which may explain the examiner's departure into "the tempting but forbidden zone of hindsight." *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d at 873, 228 USPQ at 98.

Footnote 14. The majority declined to resolve whether claims 1 and 8 encompass manual sealing (means) or are limited to automatic sealing (means). I agree with their tacit determination that the outcome of this appeal anent the broadest claims does not rest on whether the sealing (means) is automatic or manual. The significant limitation is that the sealing (means) is *responsive* to a loss of negative pressure.

Footnote 15. *In re Yamamoto*, 740 F.2d 1569, 222 USPQ 934 (Fed. Cir. 1984). Although such an interpretation is certainly broad, I question whether it is *reasonable* in light of the record. *In re Okuzawa*, 537 F.2d 545, 190 USPQ 464 (CCPA 1976); *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). It is of interest to note that on page 4 of the Answer, the examiner states he

has never and does not now contend that establishing an airflow path or providing an air inlet as called for in any of the claims may be interpreted to encompass mere air leakage.

Thus, the examiner concedes that not just any opening satisfies the claim requirement for creating an air flow path. Presumably, the examiner is of the opinion that an optional ventilation flap *inherently* creates an air flow path satisfying the appealed claims. The examiner should be aware that *inherency* and *obviousness* are distinct concepts. *In re Naylor*, 369 F.2d 765, 152 USPQ 106 (CCPA 1966); *In re Henderson*, 348 F.2d 550, 146 USPQ 372 (CCPA 1965).

Footnote 16. *Whittaker Corp. v. UNR Industries, Inc.*, 911 F.2d 709, 15 USPQ2d 1742 (Fed. Cir. 1990).

Footnote 17. Porcello Aff. Para.14; Eads Aff. Para.12.

Footnote 18. The majority resorts to speculation in assigning the optional ventilation flaps a functional role with respect to asbestos removal vis-a-vis a means to alleviate the discomfort of the workers where a high degree of asbestos removal is required.

Footnote 19. Even if it is assumed that the secondary references can be considered to reside in "analogous arts," the obviousness conclusion does not necessarily follow. *Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 1460, 221 USPQ 481, 487 (Fed. Cir. 1984).

Footnote 20. The first full paragraph on page 297 of the *Asbestos* book reads as follows:

The removal of his contaminated clothing and respirator by an operator is potentially a very hazardous operation. If an operator comes out of the working area with clothing contaminated with blue asbestos and pushes through a flap in the 'tent', removes the hood, pulls off the respirator and walks into the clean area, then not only has risk been incurred by the operator but can also be a spread of contamination to other people. This emphasizes the need for careful and standardized barrier procedures.

Footnote 21. Inasmuch as I would reverse the examiner's rejection of the broadest claims on appeal, it is unnecessary to address the propriety of the examiner's rejection of the narrower claims. Compare *In re Fine*, 837 F.2d 1071, 1076, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988). However, I do agree with appellant that the examiner has not discharged his burden of establishing that the MICRO-TRAP Bulletin is a printed publication available as prior art under 35 U.S.C. 102(a) or (b). *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 7 USPQ2d 1057 (Fed. Cir. 1988); *In re Wyer*, 655 F.2d 221, 210 USPQ 790 (CCPA 1981). I do not consider the evidence sufficient to support the holding that the MICRO-TRAP Bulletin traversed into the public domain by being *accessible* to the public. *In re Bayer*, 568 F.2d 1357, 196 USPQ 670 (CCPA 1978).

Footnote 22. Porcello Aff., Para.29.

Footnote 23. Eads Aff., Para.15.

Footnote 24. Page 18.

Footnote 25. Para.29 of the Porcello Aff. reads as follows

The *Asbestos* book reference does not disclose or suggest that the ventilation flaps provide a sealing means, manual or automatic, nor is there any suggestion that a ventilation flap automatically closes under any circumstances, much less upon loss of negative air pressure. It would not be obvious to me, or, in my opinion, to one of ordinary skill in the art, to provide the ventilation flaps with some type of sealing capability, particularly any automatic or instantaneous sealing.

Footnote 26. In my opinion, *In re Grunwell, supra*, is not particularly relevant to the exigencies of this case. In *Grunwell*, the court did not attach significant weight to opinions offered to distinguish the claimed androst-4-enes from the known androst-5-enes because affiants did not state any facts to differentiate the properties of the steroids. In the situation before us, the expert opinions relate to the level of ordinary skill in the art which has been consistently held to be a *subjective determination*. *In re Oelrich, supra*; *In re Meng, supra*.

Footnote 27. B. H. Levy, *Cardozo and Frontiers of Legal Thinking*, Oxford University Press, 1938, p. 19.

Footnote 28. Newman Aff. Paragraphs4, 7 through 10 and 13; Porcello Aff. Paragraphs20 and 21.

Footnote 29. *In re Shuman*, 361 F.2d 1008, 150 USPQ 54 (CCPA 1966).

Footnote 30. *Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992).

Footnote 31. *Minnesota Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, *supra*.

Footnote 32. EWP Corp. v. Reliance Universal, Inc., 755 F.2d 898, 225 USPQ 20 (Fed. Cir. 1985).

Footnote 33. *Cable Electric Products, Inc. v. Genmark, Inc.*, 770 F.2d 1015, 226 USPQ 881 (Fed. Cir. 1985).

Footnote 34. *In re Vamco Machine & Tool, Inc.*, *supra*, would not appear particularly relevant to the facts of this case, inasmuch as the opinions expressed therein were on the ultimate legal conclusion of obviousness by individuals having no expertise as legal experts. Moreover, the affidavit evidence was not accorded significant weight because the patent involved in the reexamination proceeding did not *enable* one having ordinary skill in the art to achieve the advantages which brought about commercial success.

Footnote 35. Since I disagree with the majority's assessment of appellant's evidence, I oppose the imposition of a new ground of rejection.

- End of Case -

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FULL TEXT OF CASES (USPQ FIRST SERIES)
 In re Shaffer, 108 USPQ 326 (CCPA 1956)

In re Shaffer

(CCPA)

108 USPQ 326

Decided Jan. 20, 1956

Appl. No. 6149

U.S. Court of Customs and Patent Appeals

Headnotes

PATENTS

1. Patentability-Substitution of equivalents (§ 51.65)

Test of equivalency is whether substituted element operates in substantially same way to produce substantially same result as element replaced.

2. Patentability-Anticipation-In general (§ 51.201)

Patentability - Anticipation-Combining references (§ 51.205)

Patentability-Evidence of-In general (§ 51.451)

Although references may be combined to show that claim is unpatentable, they may not be combined indiscriminately; criterion to determine whether combination is proper is whether prior art suggests doing what applicant did; when references are combined to negate patentability, it should also be considered whether one skilled in art with references before him could have made combination of elements claimed without exercise of invention; it is not enough for valid rejection to view prior art in retrospect once applicant's disclosure is known; art applied should be viewed by itself to see if it fairly disclosed doing what applicant did; if art did not do so, references may have been improperly combined.

3. Patentability-Anticipation-In general (§ 51.201)

Patentability - Anticipation-Combining references (§ 51.205)

One having references before him who was not cognizant of applicant's disclosure would not be informed that problem solved by applicant ever existed; therefore, references which never recognized applicant's problem cannot have suggested its solution; references were improperly combined since there is no suggestion in either of them that they can be combined to produce applicant's result.

4. Patentability-Aggregation or combination-Of old elements (§ 51.159)

Although new combination of old elements may be patentable, not all new combinations are patentable; elements must cooperate in such manner as to produce new, unobvious, and unexpected result.

5. Patentability - Invention - Improvements (§ 51.505)

Generally, in determining patentability, conception of new and useful improvement must be considered along with actual means of achieving the improvement.

6. Patentability-Evidence of-In general (§ 51.451)

In many cases, discovery of problem is often an essential element in invention correcting problem; though problem, once realized, may be solved by use of old and known elements, this does not necessarily negative invention.

Particular patents-Titrating

Shaffer, Titrating Apparatus, claims 29 to 33 of application allowed.

Case History and Disposition:

Page 327

Appeal from Board of Appeals of the Patent Office.

Application for patent of Philip A. Shaffer, Jr., Serial No. 662,453; Patent Office Division 56. From decision rejecting claims 29 to 33, applicant appeals. Reversed.

Attorneys:

James B. Christie (Richard B. Hoegh of counsel) both of Pasadena, Calif., for appellant.

Clarence W. Moore (J. Schimmel of counsel) for Commissioner of Patents.

Judge:

Before O'Connell, Acting Chief Judge, and Johnson, Worley and Cole, Associate Judges.

Opinion Text

Opinion By:

Johnson, Judge.

This is an appeal from the decision of the Board of Appeals of the United States Patent Office affirming the holding of the Primary Examiner rejecting as unpatentable claims 29 through 33, the only remaining claims in appellant's application for a patent relating to titrating apparatus.

The embodiment of the invention sought to be patented, as set forth in the claims, relates to an automatic apparatus for continuously titrating a moving stream of fluid. The apparatus basically consists of a first pair of electrodes immersed in the fluid for electrolytically generating a reagent which reacts chemically with the fluid which is to be titrated. The amount of reagent which is generated depends on the amount of current which is supplied to the first pair of electrodes, this current being controlled by the potential existing at a second pair of electrodes. The second pair of electrodes (or other sensing means) detects when an end point has been reached, that is, when the amount of reagent being generated by the first electrodes is sufficient to completely react with the fluid of unknown concentration which is being titrated. If there is any departure from the end point, the second electrodes, by supplying a signal to an electronic amplifier, cause said amplifier to change the amount of the current supplied to the first electrodes, this change in current in turn changing the amount of reagent being generated, so that an end point is again reached. The amount of current supplied to the first electrodes to maintain the reaction at an end point is proportional to the amount of reagent which is generated, and a measure of this current is therefore a measure of the concentration of the fluid being titrated. The "electronic power amplifier," which couples the first and second pairs of electrodes for the purpose of causing the system to operate in the aforementioned manner, possesses, as a component thereof, a reactive circuit which, in the terms of the claims, "more strongly attenuates high frequency components" of the amplifier input than low frequency components. The function of the reactive circuit, as we glean it from the specification, is to minimize amplification of rapid fluctuations of the amplifier input which are caused when the reaction approaches an end point, said fluctuations not being representative of true end point value. This results in more accurate titration.

Claim 29 is the broadest claim on appeal, and is representative of those appealed insofar as is pertinent for the purposes of this opinion. This claim reads as follows:

Page 328

29. In an automatic titrating mechanism for the quantitative determination of a first reactant in a fluid, the combination which comprises a cell into which the fluid is introduced, electrolytic means for generating a second reactant for reaction to an end point in the cell with the first reactant, end point sensing means in operative association with the cell for producing a potential difference which changes as the excess of one of the reactants in the cell changes from the end point, an electronic power amplifier of high transconductance having its input connected to the end point sensing means and its output connected to the electrolytic means to supply power thereto for generating the second reactant and so arranged that its output current varies in response to the change in the potential difference, and means including a reactive circuit connected between the end point sensing means and the electrolytic means for more strongly attenuating high frequency components of the amplifier input than low frequency components of the amplifier input.

The references relied on by the Patent Office are:

Eberhardt et al. 2,297,543 Sept. 29, 1942

Eckfeldt 2,621,671 Dec. 16, 1952 (Filed Nov. 21, 1944)

The Eckfeldt patent relates to an electrolytic titrimeter having the basic elements of appellant's device. It differs from appellant's titrimeter in that it employs an electro-mechanical system for changing the amount of current generated by a pair of reagent generating electrodes in response to a change in potential at a pair of sensing electrodes. The electro-mechanical system consists of a reversible electric motor, driven in response to the change in potential at the sensing electrodes, which adjusts the setting of a variable resistor in the circuit of the reagent generating electrodes to change the current supplied to said electrodes, and thereby change the amount of reagent being generated in order to achieve an end point.

The Eberhardt et al. patent relates to a direct voltage amplifier. Insofar as pertinent here, a part of the amplifier consists of a reactive circuit which acts as a bypass for undesired alternating voltage components of the direct voltage which is to be amplified.

The examiner and the Board of Appeals were in substantial agreement in holding that the appealed claims were unpatentable over Eckfeldt in view of Eberhardt et al. on the ground that it would not involve invention to substitute the electronic amplifier of Eberhardt et al. for the electro-mechanical amplifier of Eckfeldt primarily because they are equivalents and also because such a substitution would be apparent to those skilled in the art and would therefore not involve invention. The examiner came to this conclusion notwithstanding his recognition that appellant's " * * * end point voltage is a slowly fluctuating D. C. signal, because the total amount of reagents present require a finite time to complete their reaction * * *, " and his further recognition that "Applicant provides his amplifier with circuit elements to minimize amplification of rapid fluctuation of signal voltage, which would not be representative of end point values. * * *" "

[1] The first question we must consider is whether the electronic amplifier of Eberhardt et al. is the equivalent of the electro-mechanical amplifier of Eckfeldt under the present circumstances. A test of equivalency is whether the substituted element operates in substantially the same way to produce substantially the same result as the element replaced. *In re Lindberg*, 39 C.C.P.A. (Patents) 866, 194 F.2d 732, 93 USPQ 23. *In re Husted*, 17 C.C.P.A. (Patents) 1002, 39 F.2d 713, 5 USPQ 397 . We think that this criterion should be used in determining whether equivalency exists in the present case. The electronic amplifier of Eberhardt et al., as constructed, is capable of preventing undesirable fluctuations of output current from the amplifier; the electro-mechanical amplifier of Eckfeldt cannot do this. The use of the former therefore produces different results in the titrating system since it minimizes the output of fluctuating current from the amplifier. It is our opinion, therefore, that since the electronic amplifier does not operate in the same way as the electro-mechanical amplifier, and since it produces a different result, it cannot be considered the equivalent of the latter.

Having determined that there is no equivalency between the electro-mechanical amplifier and the electronic amplifier in the present case, we must now determine whether claim 29 defines an invention. However, there is a closely related ancillary question which must be considered, namely, whether the references were properly combined. If they were, there is no question but that claim 29 was properly rejected since the combination of references meets all the limitations of the claim.

[2] It is too well settled for citation that references may be combined for the purpose of showing that a claim is unpatentable. However, they may not be

Page 329

combined indiscriminately, and to determine whether the combination of references is proper, the following criterion is often used: namely, whether the prior art suggests doing what an applicant has done. *In re Fridolph*, 30 C.C.P.A. (Patents) 939, 134 F.2d 414, 57 USPQ 122 . *In re Dalzell*, 33 C.C.P.A. (Patents) 808, 152 F.2d 1013, 68 USPQ 171 . Furthermore, when references are combined to negate patentability, it should also be considered whether one skilled in the art with the references before him could have made the combination of elements claimed without the exercise of invention. *In re Goepfrich*, 30 C.C.P.A. (Patents) 1181, 136 F.2d 918, 58 USPQ 324 . The foregoing cases, in our opinion, stand for the proposition that it is not enough for a valid rejection to view the prior art in retrospect once an applicant's disclosure is known. The art applied should be viewed by itself to see if it fairly disclosed doing what an applicant has done. If the art did not do so, the references may have been improperly combined.

At this point we will analyze claim 29 in the light of both the prior art and the foregoing law to determine whether the references were properly combined. It is to be noted that claim 29 recites, as an element of the titrating apparatus, an electronic amplifier including a reactive circuit for "more strongly attenuating high frequency components of the amplifier input than low frequency components." The purpose of this structure, in the words of the examiner, is to " * * * minimize amplification of rapid fluctuations of signal voltage, which would not be representative of end point value. * * *" The Eckfeldt patent teaches the use of an electro-mechanical amplifier for use with titrating apparatus of the general nature disclosed by appellant. There is no doubt that the Eberhardt et al. electronic amplifier possesses the structure recited in the claim, and is capable of performing the function of appellant's amplifier. However, there is no teaching in the Eckfeldt patent that a problem exists in that rapid fluctuations of the signal voltage are not representative of end point values. While the Eberhardt et al. amplifier is inherently capable of minimizing the effect of undesirable fluctuating signals, there is no teaching in the patent that the amplifier can be used with titrating apparatus for the purpose of minimizing the effect of undesired fluctuations of signal voltage which occur in a titrating operation of the nature involved here. In short, there is no teaching in either of the patents which would suggest that they could be combined for the purpose of producing a more accurate titration. In fact, a

[3] person having the references before him who was not cognizant of appellant's disclosure would not be informed that the problem solved by appellant ever existed. Therefore, can it be said that these references which never recognized appellant's problem would have suggested its solution? We think not, and therefore feel that the references were improperly combined since there is no suggestion in either of the references that they can be combined to produce appellant's result.

[4] We deem it necessary at this point to review the criterion of patentability which is applicable to this case where a known combination, such as shown in Eckfeldt, is modified by the use of a known element, such as shown in Eberhardt et al. In cases involving analogous factual situations, it has been stated that a new combination of old elements may be patentable; but not all new combinations are patentable; and that if a new combination of old elements is to be patentable, the elements must cooperate in such a manner as to produce a new, unobvious, and unexpected result. In re Kaufmann, 39 C.C.P.A. (Patents) 769, 193 F.2d 331, 92 USPQ 141. In re

[5] Lindberg, supra. Furthermore, as a general matter, in determining patentability, the conception of a new and useful improvement must be considered along with the actual means of achieving the improvement. In re DeLancey, 34 C.C.P.A. (Patents) 849, 159 F.2d 737, 72 USPQ 477. In re Bisley, 39 C.C.P.A. (Patents) 982, 197 F.2d 355, 94 USPQ 80. And it should be remembered that

[6] in many cases the discovery of a problem is often an essential element in an invention correcting such a problem; and though the problem, once realized, may be solved by the use of old and known elements, this does not necessarily negative invention. In re Hamilton, 20 C.C.P.A. (Patents) 987, 64 F.2d 141, 17 USPQ 245. In re Bisley, supra.

In the present case, appellant has recognized a problem which is inherent in the titration of fluids with the general type of apparatus involved here. This problem, as stated above is that rapid fluctuations of signal voltage are not representative of true end point values. To overcome this problem, which was not recognized in the prior art, appellant has combined elements, all old in the art. However, since this combination of elements evidences the discovery and solution of a heretofore unknown problem to produce a new, unobvious, and unexpected result, namely improved titration, we feel that appellant has met the tests for patentability which are set forth by the above-cited cases.

Claim 29 recites all of the elements necessary to achieve appellant's result, and we are of the opinion that it is patentable. Claims 30 to 33 contain all the limitations of claim 29. We deem it unnecessary to discuss these claims in detail. It suffices to say that in our opinion these claims are also allowable.

Since the foregoing law as applied to the facts is determinative of the question of patentability, we deem it unnecessary to consider the other arguments which have been presented.

For the foregoing reasons, the decision appealed from should be *reversed*.

- End of Case -

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